

## **Appendix G. Option 4 Hydrologic/Hydrodynamic Model Results**

The following appendix presents hydrologic/hydrodynamic model results in the following tables and figures:

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Figure G-1b. Sacramento River at Rio Vista Above Normal Year Average Flows

Figure G-1c. Sacramento River at Rio Vista Below Normal Year Average Flows

Figure G-1d. Sacramento River at Rio Vista Dry Year Average Flows

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## G. Option 4 Hydrologic/Hydrodynamic Model Results

Table G-1. Summary Output for the Implementation of Conservation Strategy: Option 4

	Base		Option 4A				Option 4B			
	Annual Average <sup>2</sup> (1)	Dry period <sup>3</sup> (2)	Annual Average <sup>2</sup> (3)	Dry period <sup>3</sup> (4)	Change (3)-(1)	Change (4)-(2)	Annual Average <sup>2</sup> (5)	Dry period <sup>3</sup> (6)	Change (5)-(1)	Change (6)-(2)
<b>Delta flows<sup>1</sup></b>										
Sacramento River @ Hood	16,229	8,269	16,267	8,327	39	58	16,433	8,059	204	-210
San Joaquin River @ Vernalis	3,027	1,362	3,033	1,370	6	9	3,028	1,335	2	-27
Sacramento River @ Rio Vista	13,812	5,164	9,915	3,435	-3,897	-1,729	10,560	3,329	-3,252	-1,835
Delta Outflow	14,991	5,154	15,098	5,553	107	399	15,854	5,395	863	241
SWP/CVP Exports	5,902	3,572	5,824	3,243	-78	-329	5,129	3,101	-773	-472
QWEST (cfs)	1,620	-12	7,162	2,939	5,542	2,951	7,321	2,867	5,701	2,879
Old and Middle River (cfs)	-5,842	-4,635	657	-695	6,499	3,940	647	-740	6,489	3,894
<b>Water quality<sup>4</sup></b>	Annual Average <sup>5</sup> (1)	Dry period <sup>3</sup> (2)	Annual Average <sup>5</sup> (3)	Dry period <sup>3</sup> (4)	Change (3)-(1)	Change (4)-(2)	Annual Average <sup>5</sup> (5)	Dry period <sup>3</sup> (6)	Change (5)-(1)	Change (6)-(2)
X2 (km)	76	82	74	81	-2	-1	74	81	-2	-1
EC Exports <sup>6</sup>	488		176		-312		176		-312	
EC at Emmaton	1,128		941		-187		904		-224	
EC at Jersey Point	1,074		638		-436		630		-444	
EC at Collinsville	3,816		3,068		-747		2,969		-846	
EC at Old River, Hwy 4	488		600		113		619		131	
<b>Particle Transport and Fate<sup>7</sup></b>	Average <sup>8</sup> (1)		Average <sup>8</sup> (2)		Change (2)-(1)		Average <sup>8</sup> (3)		Change (3)-(1)	
Insertion on Old River @ Quimby Island	57		0		-57		0		-57	
Insertion on Middle River @ Mildred Island	59		0		-59		0		-59	
Insertion on San Joaquin River near Big Break	9		0		-9		0		-9	
Insertion on Sacramento River near Cache Slough	13		0		-13		0		-13	
Insertion on San Joaquin River near Head of Old River	47		0		-47		0		-47	

1   **Table G-1. Summary Output for the Implementation of Conservation Strategy: Option 4**

2   NOTES:

3   1. Units in TAF unless mentioned otherwise

4   2. Annual average, 1921-2003

5   3. Dry period, 1928-1934

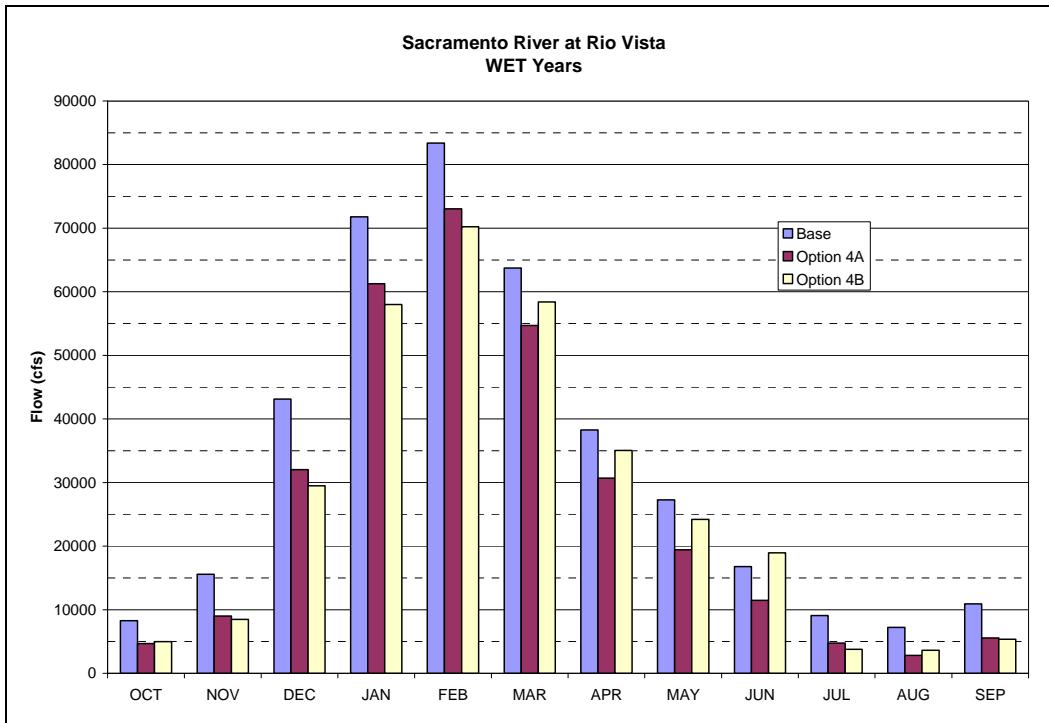
6   4. Units in EC,  $\mu$ MHOS/cm unless mentioned otherwise

7   5. For EC conductivity parameter values represent 16-year monthly Period Averaged; for X2 values represent annual average, 1921-2003

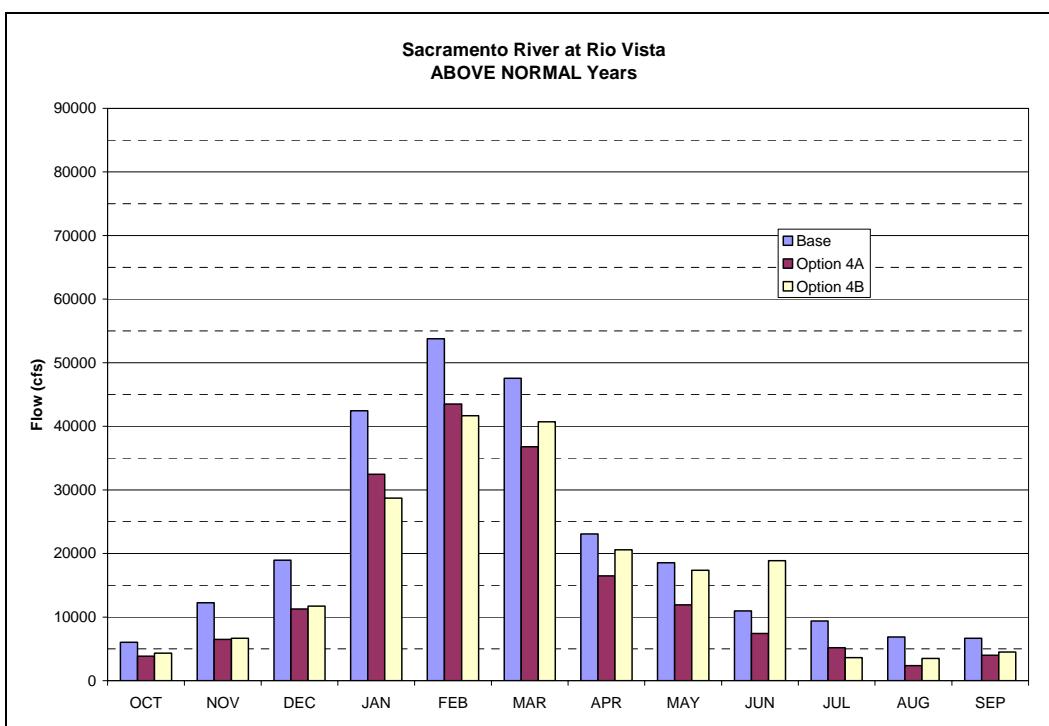
8   6. Base: EC is blended between EC at Banks and EC at Tracy; Option 4A and 4B: EC Exports is EC at Isolated Facility diversion

9   7. Percentage of particles entering SWP and CVP pumping stations in Baseline and entering the isolated facility diversion in Option 4

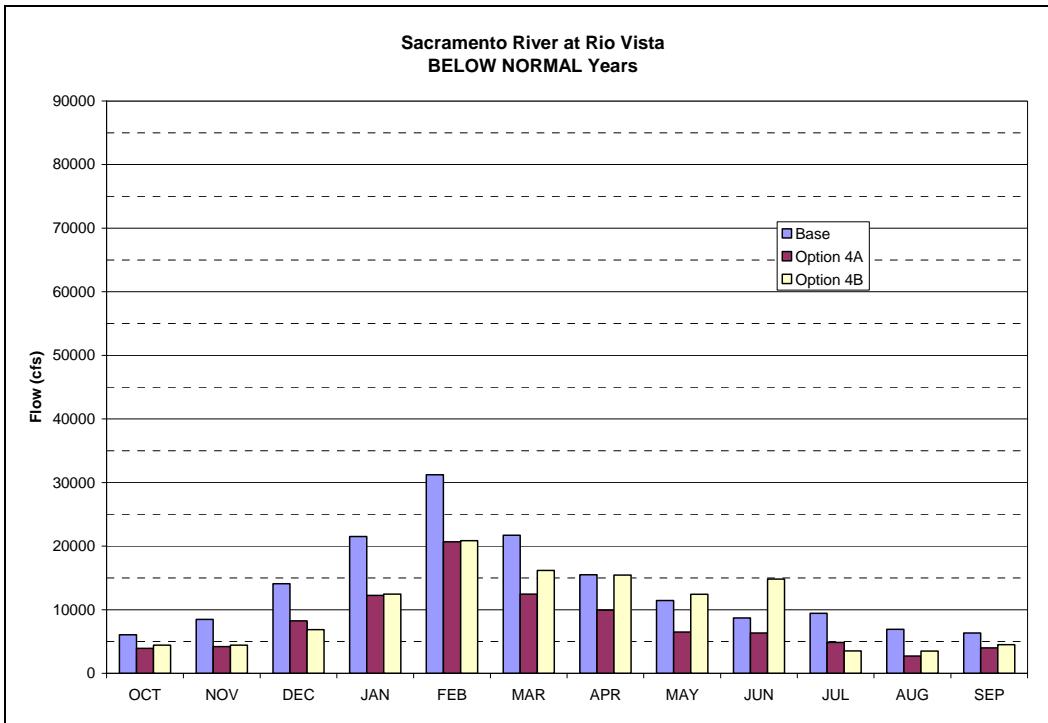
10   8. Average of 1977, 1981 and 1990 releases of % cumulative particles ended up in exports at the end of 40 days



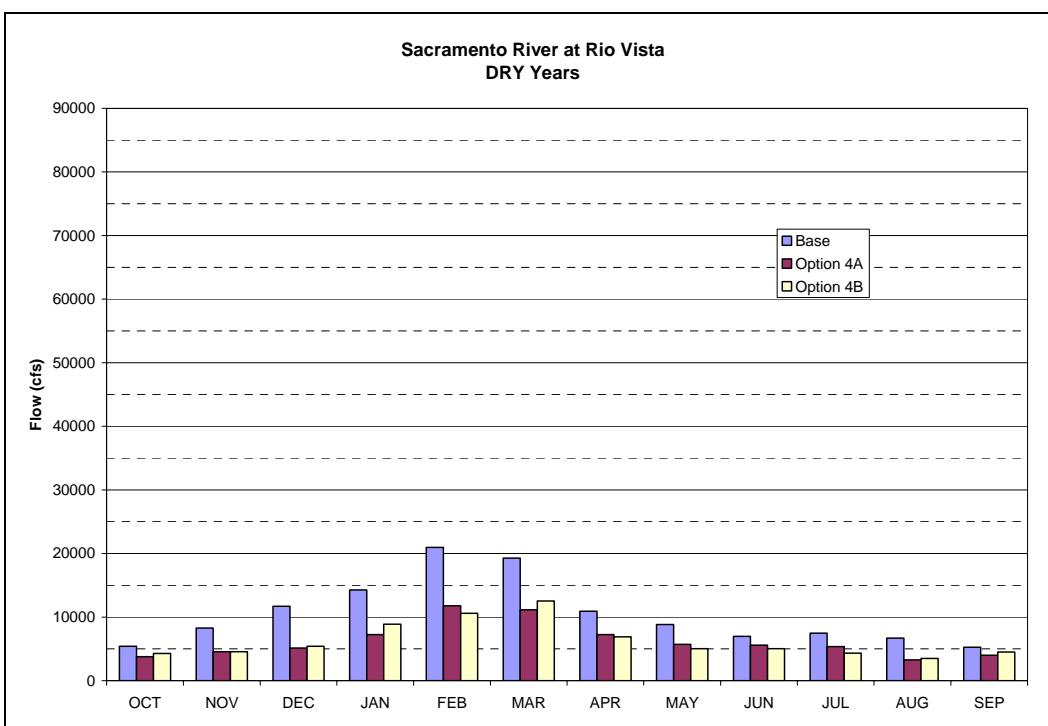
**Figure G-1a. Sacramento River at Rio Vista Wet Year Average Flows**



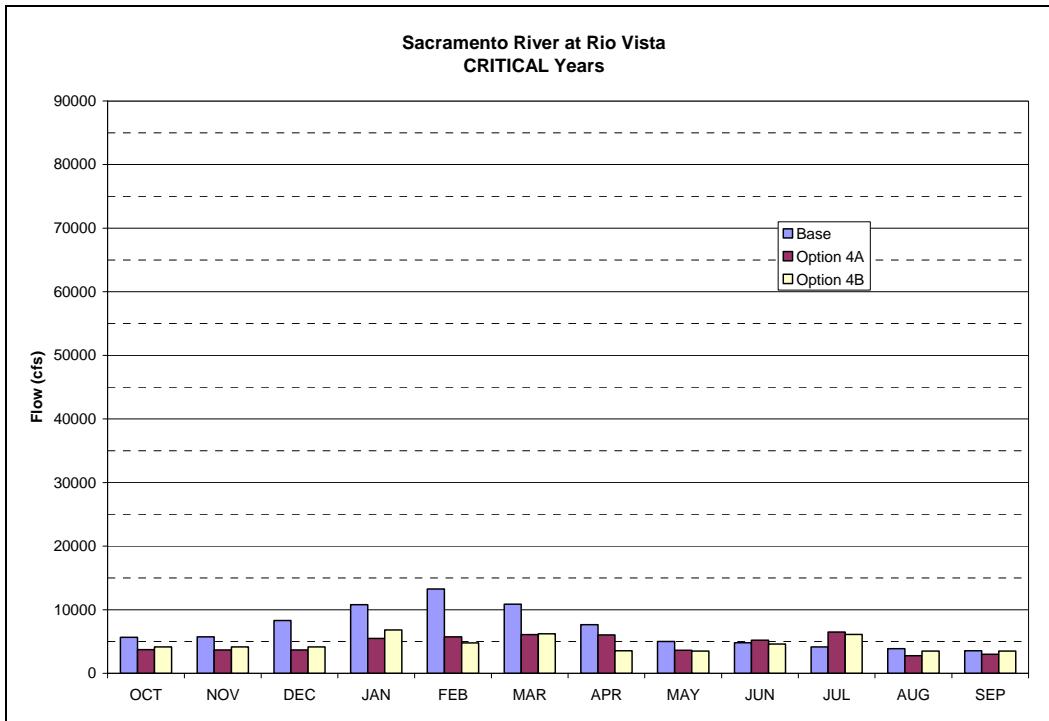
**Figure G-1b. Sacramento River at Rio Vista Above Normal Year Average Flows**



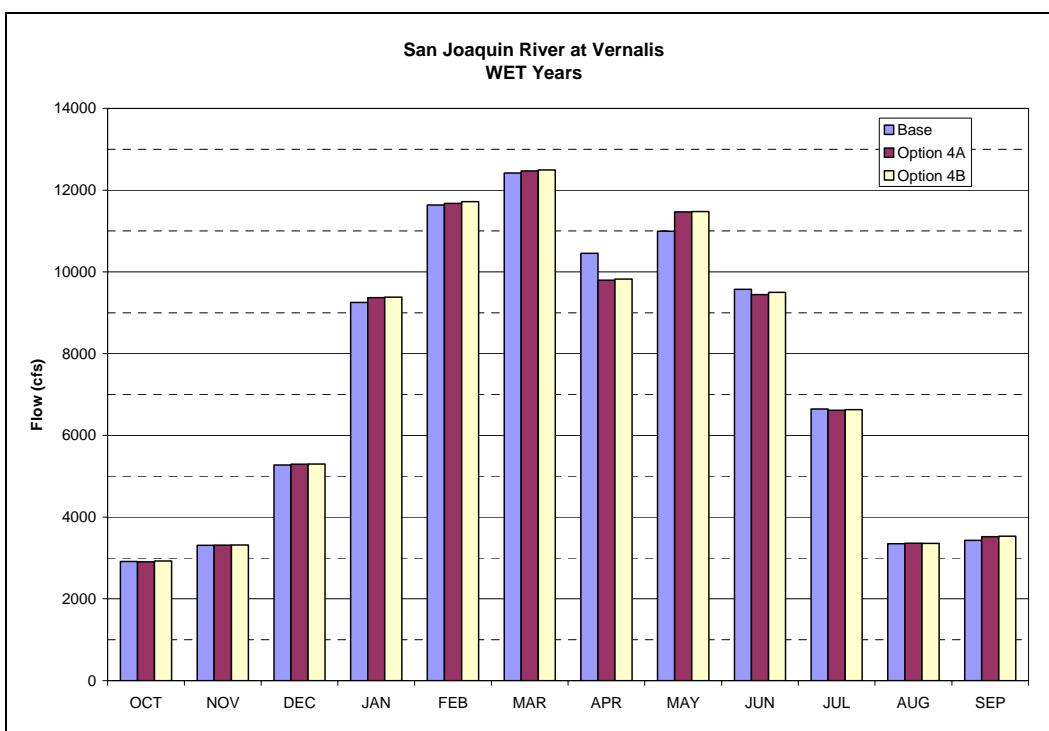
**Figure G-1c. Sacramento River at Rio Vista Below Normal Year Average Flows**



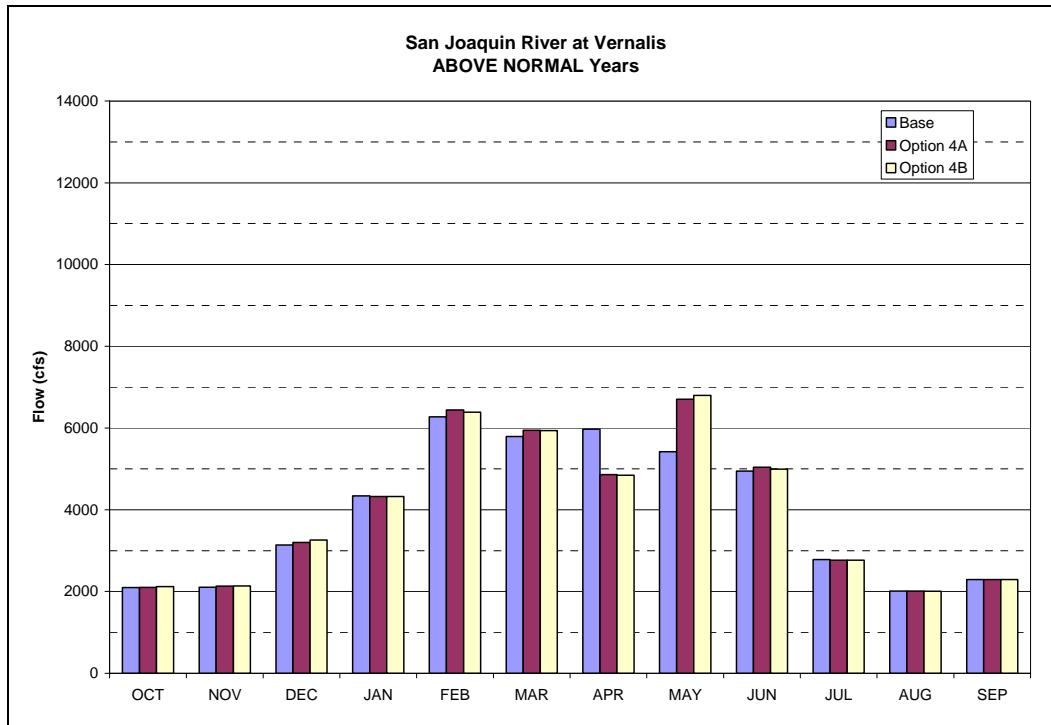
**Figure G-1d. Sacramento River at Rio Vista Dry Year Average Flows**



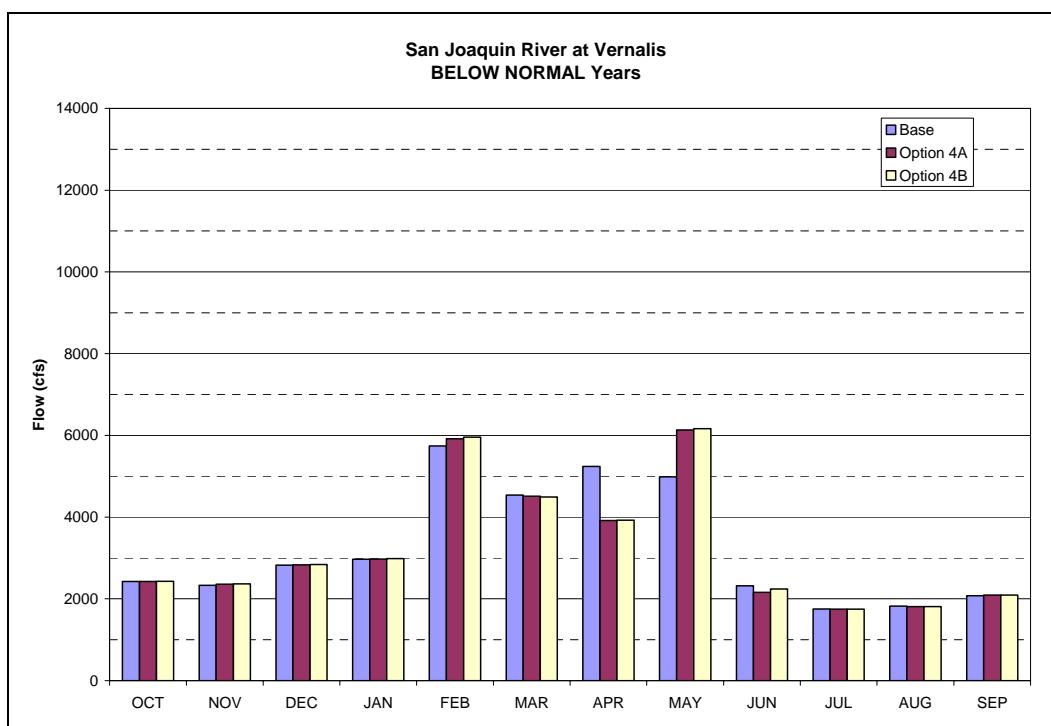
**Figure G-1e. Sacramento River at Rio Vista Critical Year Average Flows**



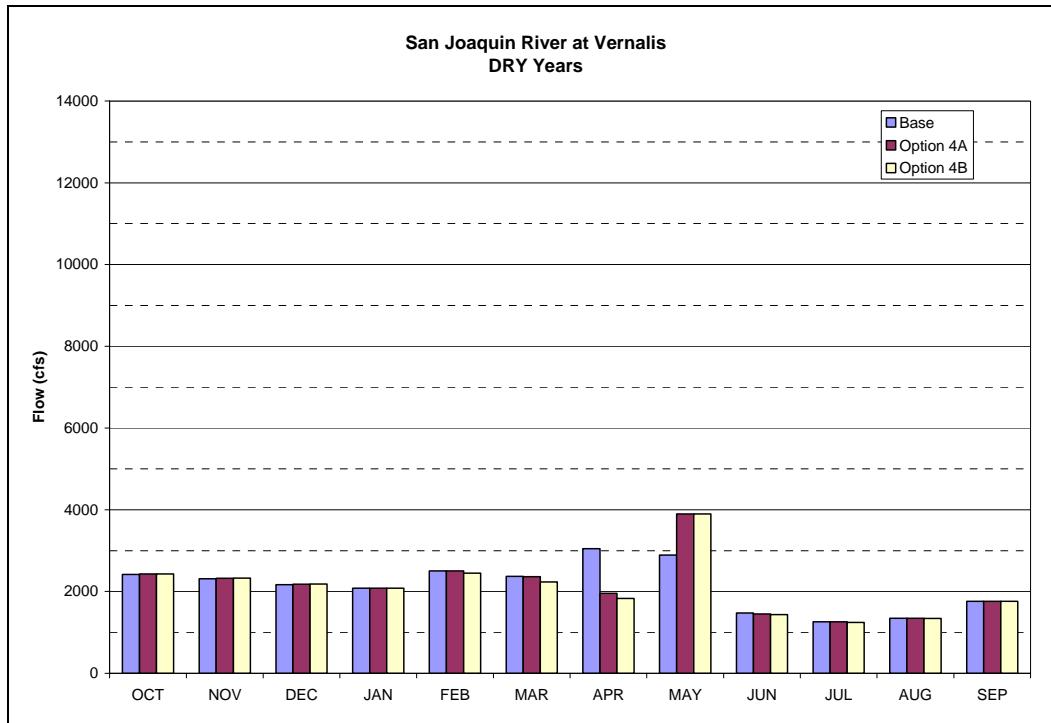
**Figure G-2a. San Joaquin River at Vernalis Wet Year Average Flows**



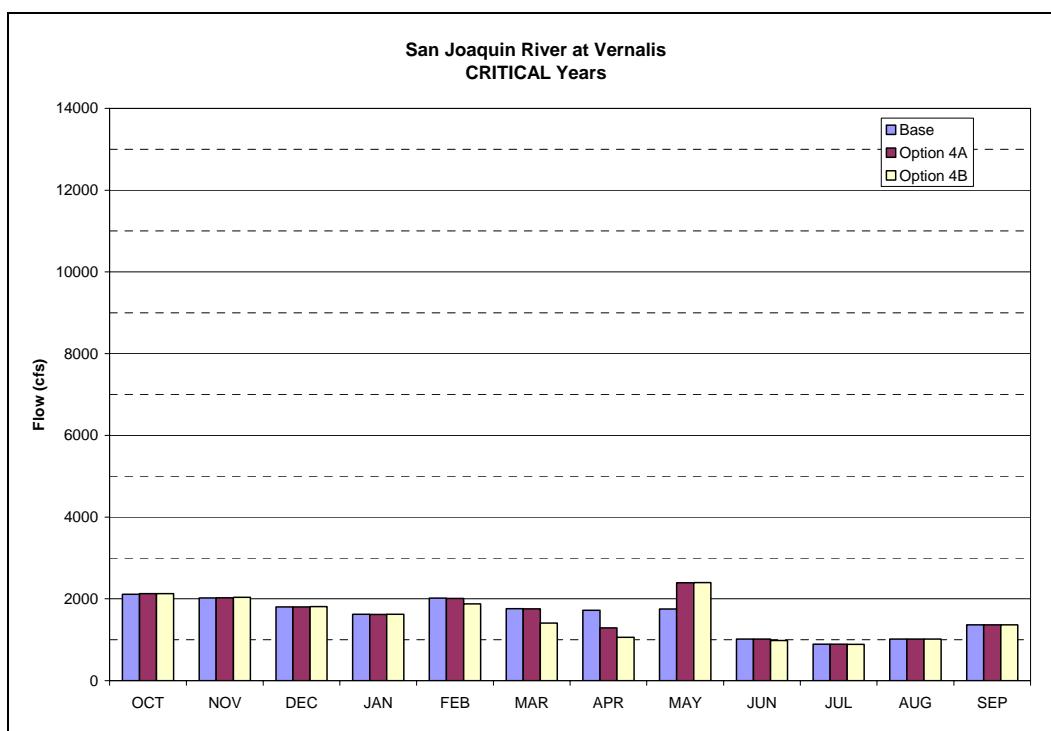
**Figure G-2b. San Joaquin River at Vernalis Above Normal Year Average Flows**



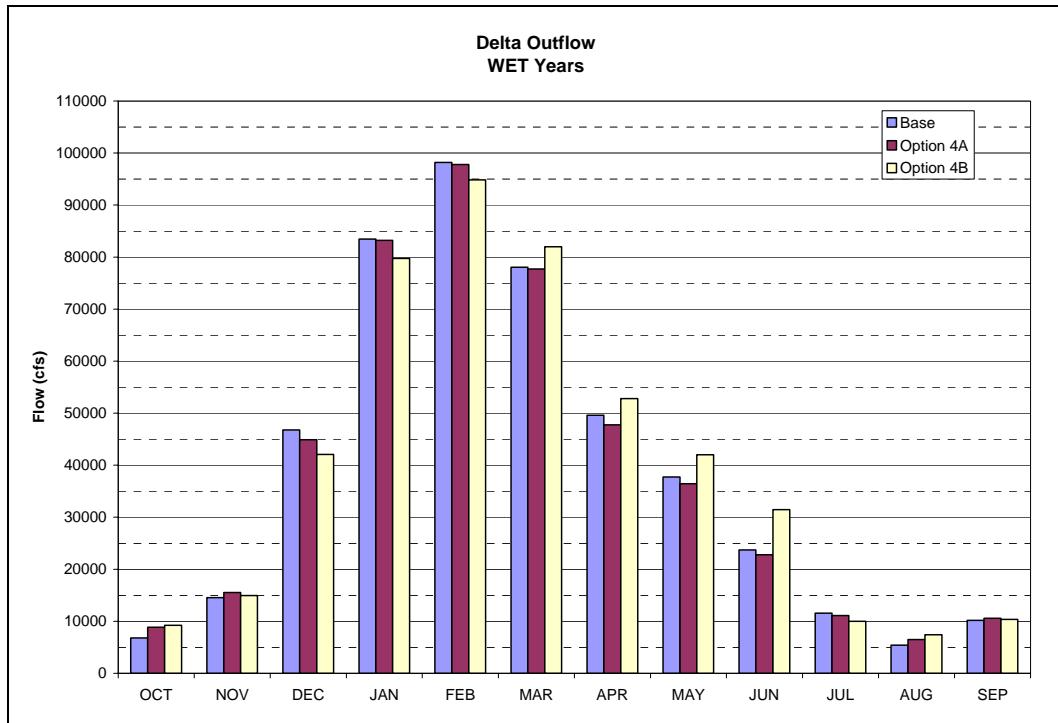
**Figure G-2c. San Joaquin River at Vernalis Below Normal Year Average Flows**



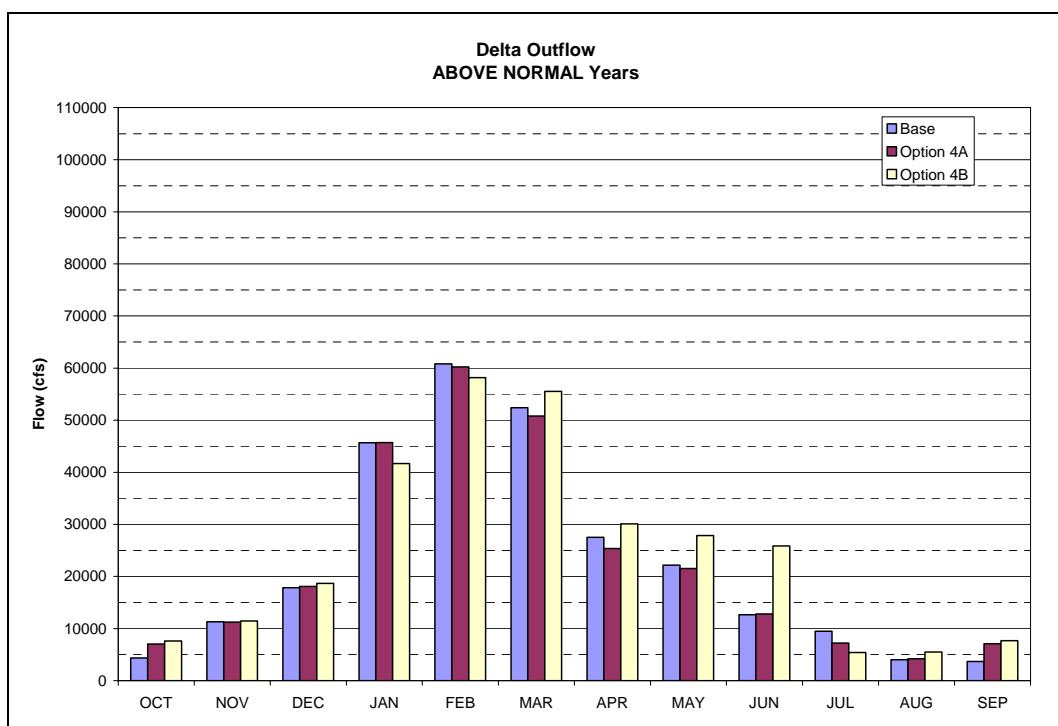
**Figure G-2d. San Joaquin River at Vernalis Dry Year Average Flows**



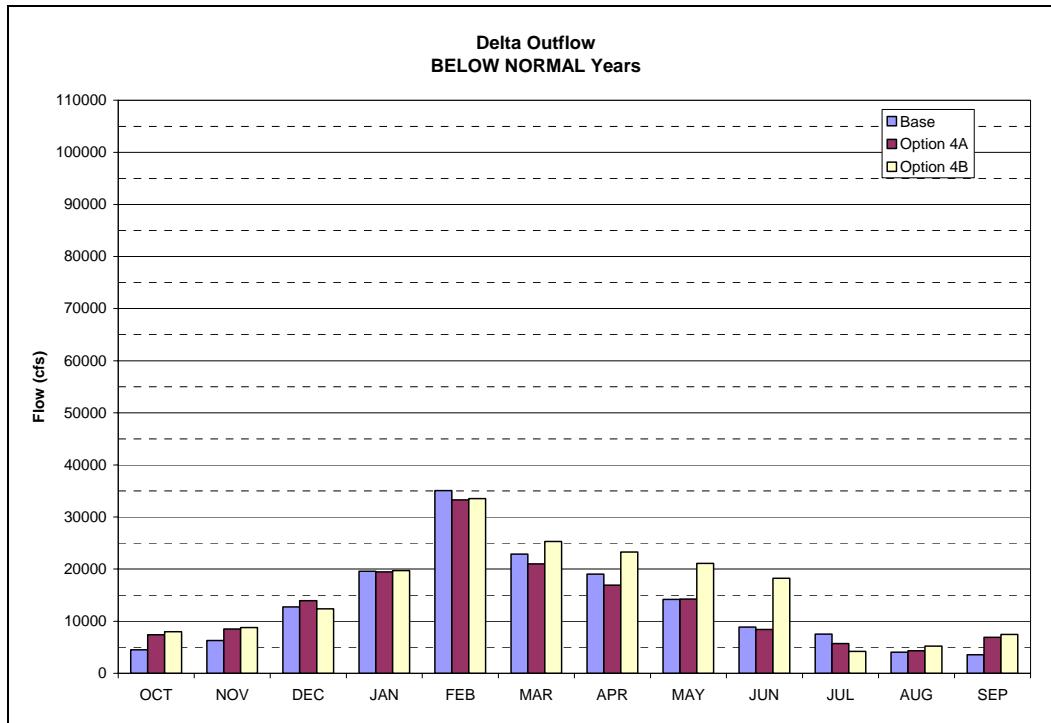
**Figure G-2e. San Joaquin River at Vernalis Critical Year Average Flows**



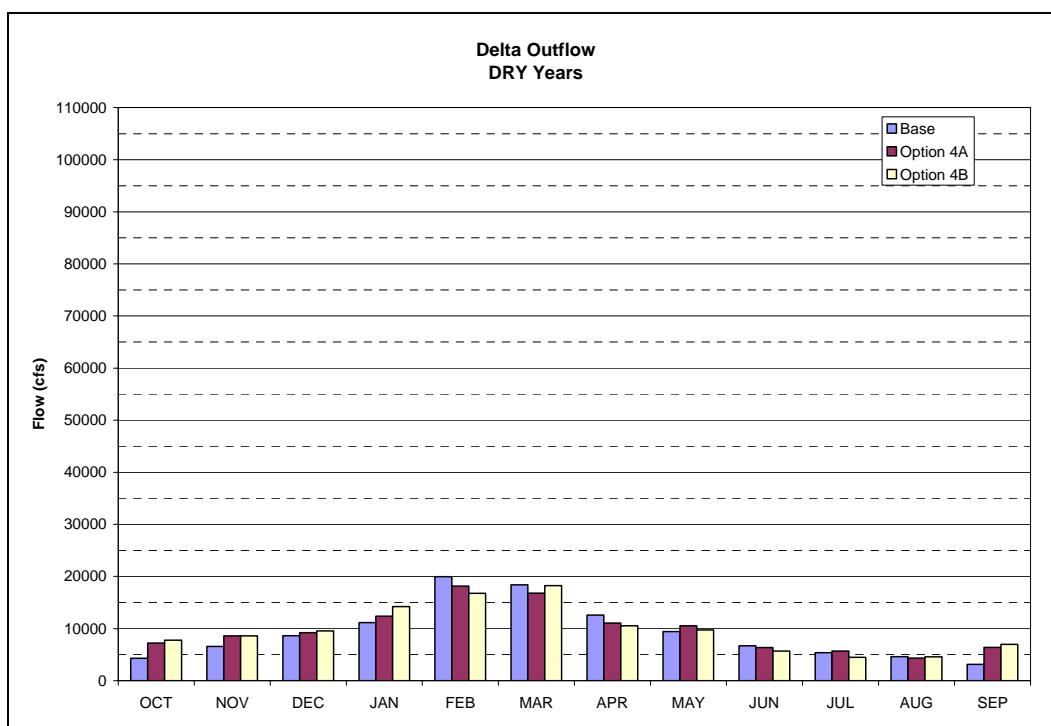
**Figure G-3a. Delta Outflow Wet Year Average Flows**



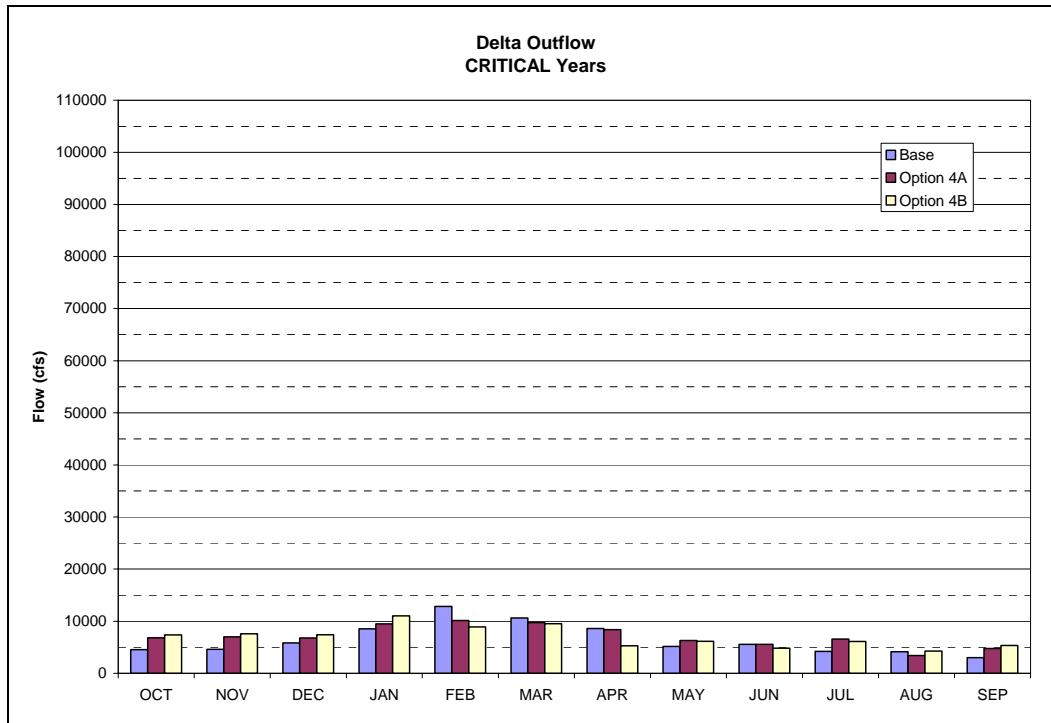
**Figure G-3b. Delta Outflow Above Normal Year Average Flows**



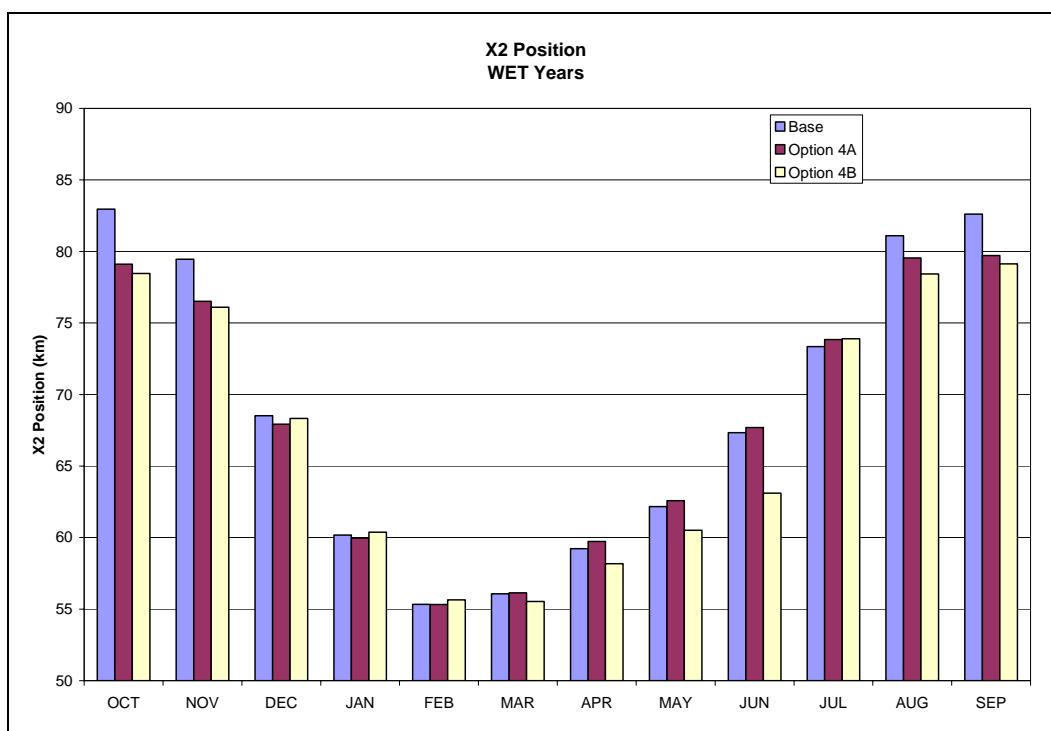
**Figure G-3c. Delta Outflow Below Normal Year Average Flows**



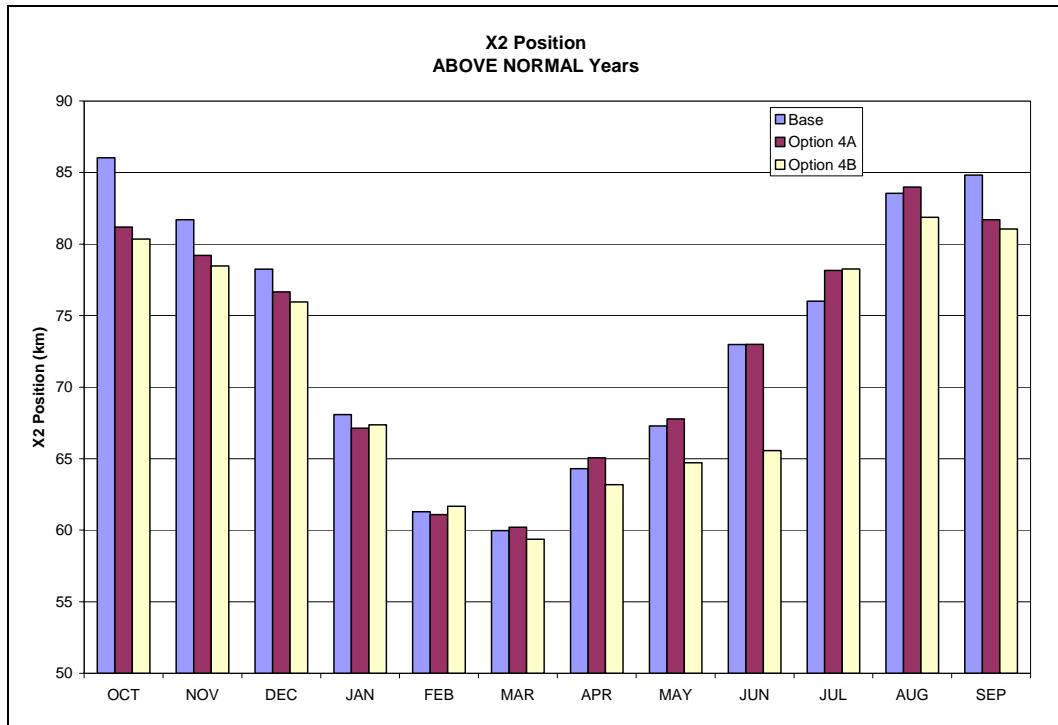
**Figure G-3d. Delta Outflow Dry Year Average Flows**



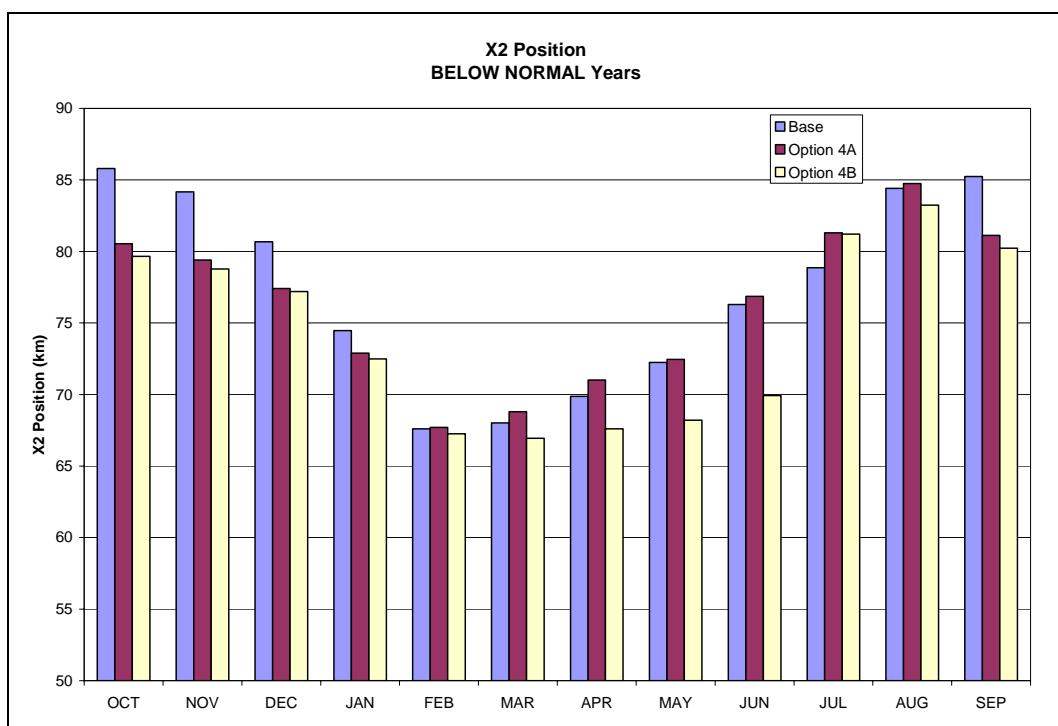
**Figure G-3e. Delta Outflow Critical Year Average Flows**



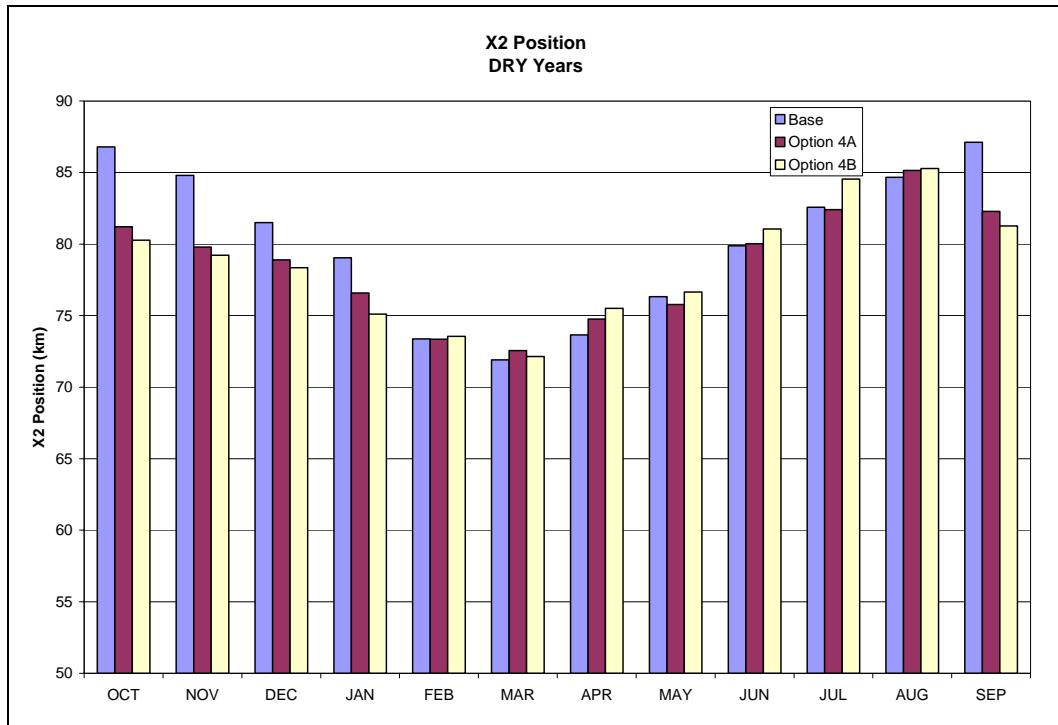
**Figure G-4a. X2 Wet Year Average Distance**



**Figure G-4b. X2 Above Normal Year Average Distance**



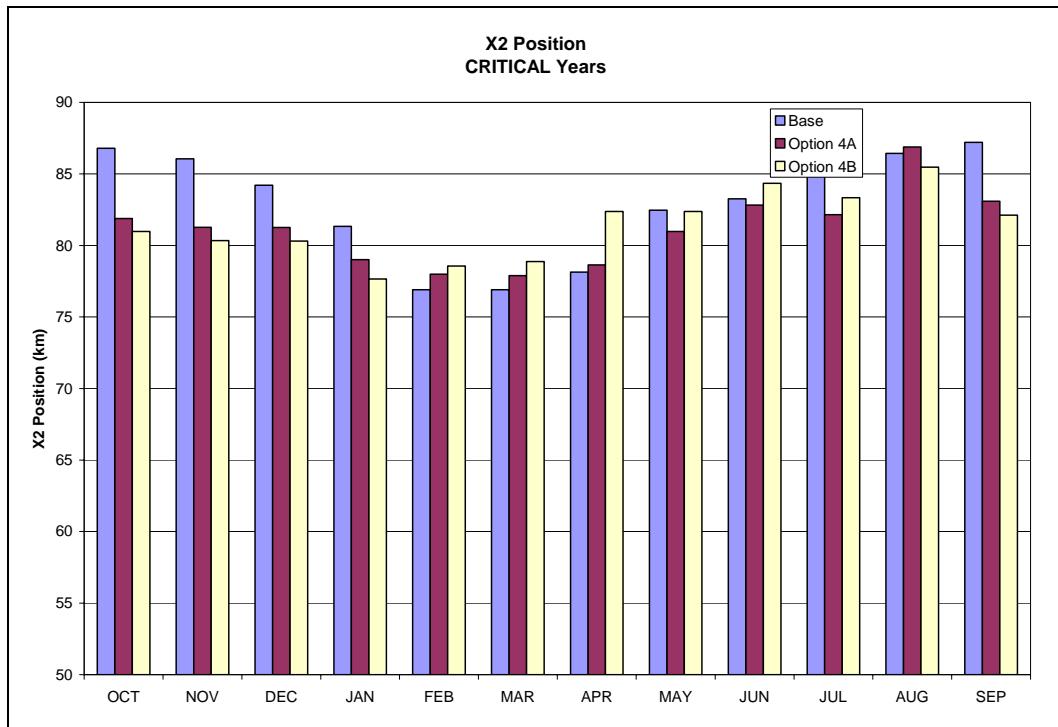
**Figure G-4c. X2 Below Normal Year Average Distance**



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2 **Figure G-4d. X2 Dry Year Average Distance**

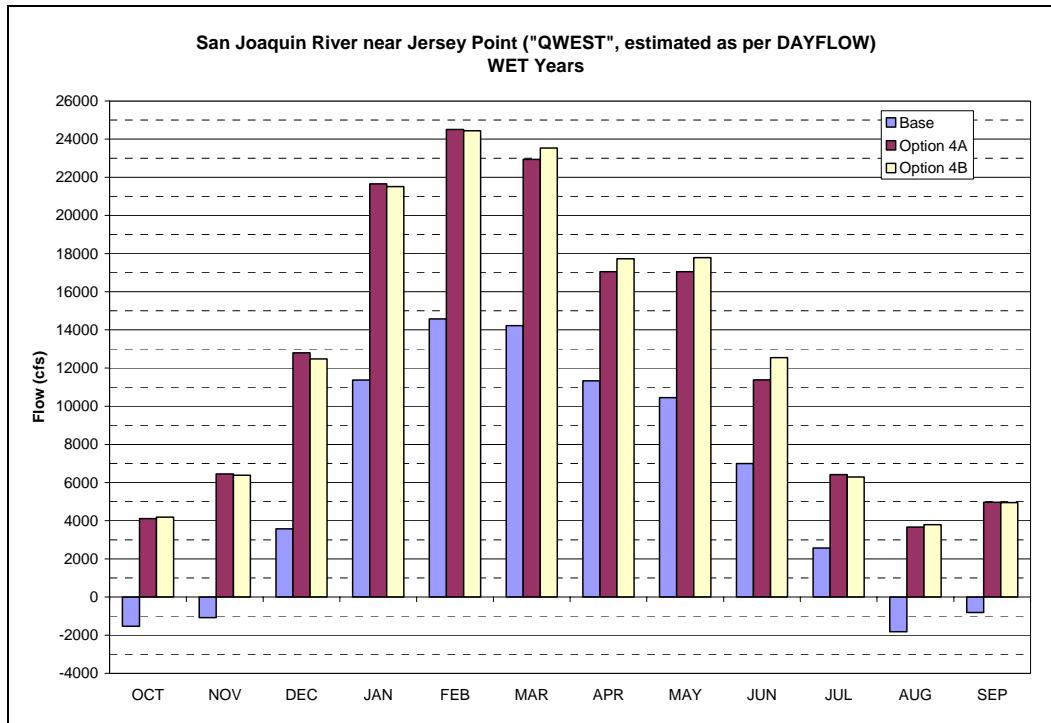
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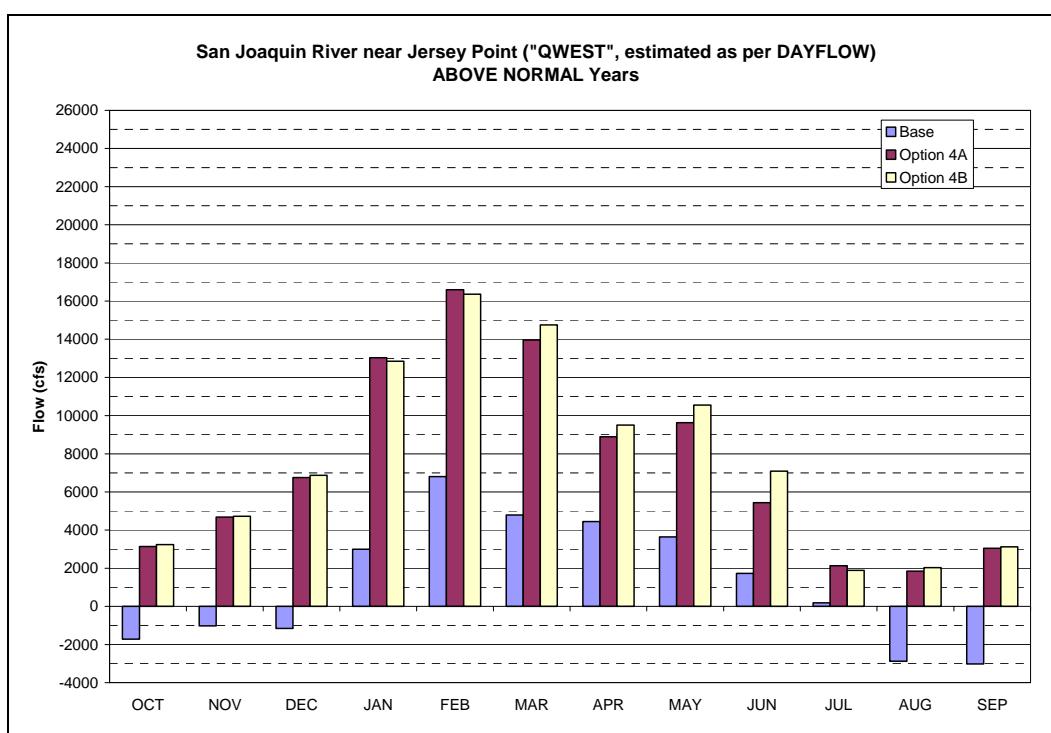
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5 **Figure G-4e. X2 Critical Year Average Distance**

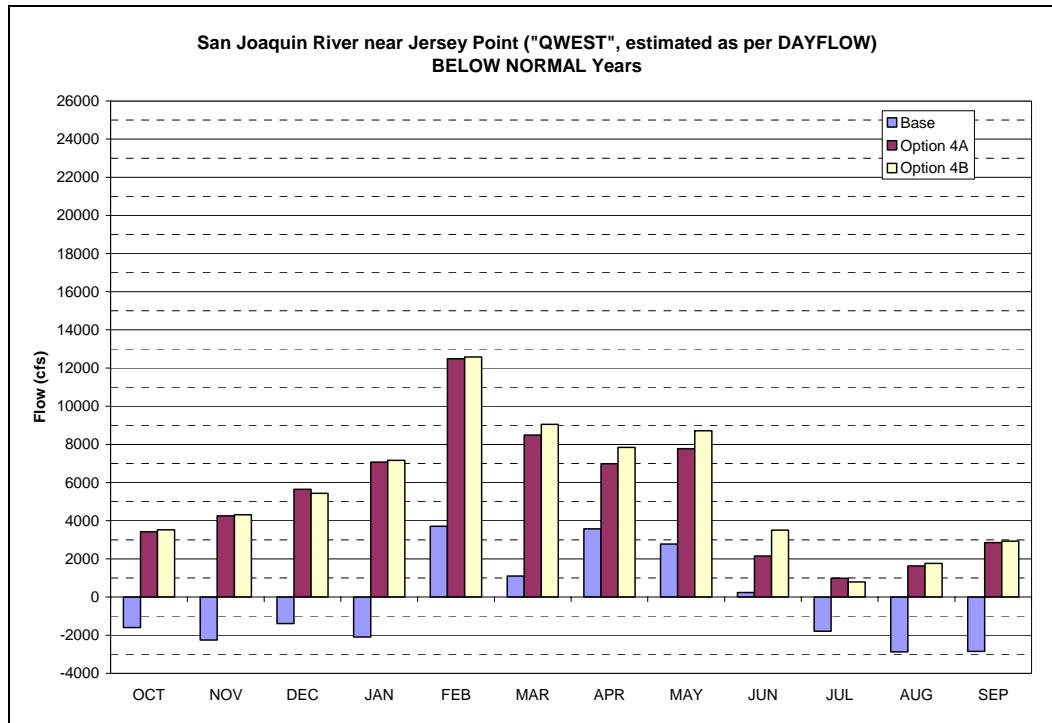
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2 **Figure G-5a. QWEST Wet Year Average Flows**  
3



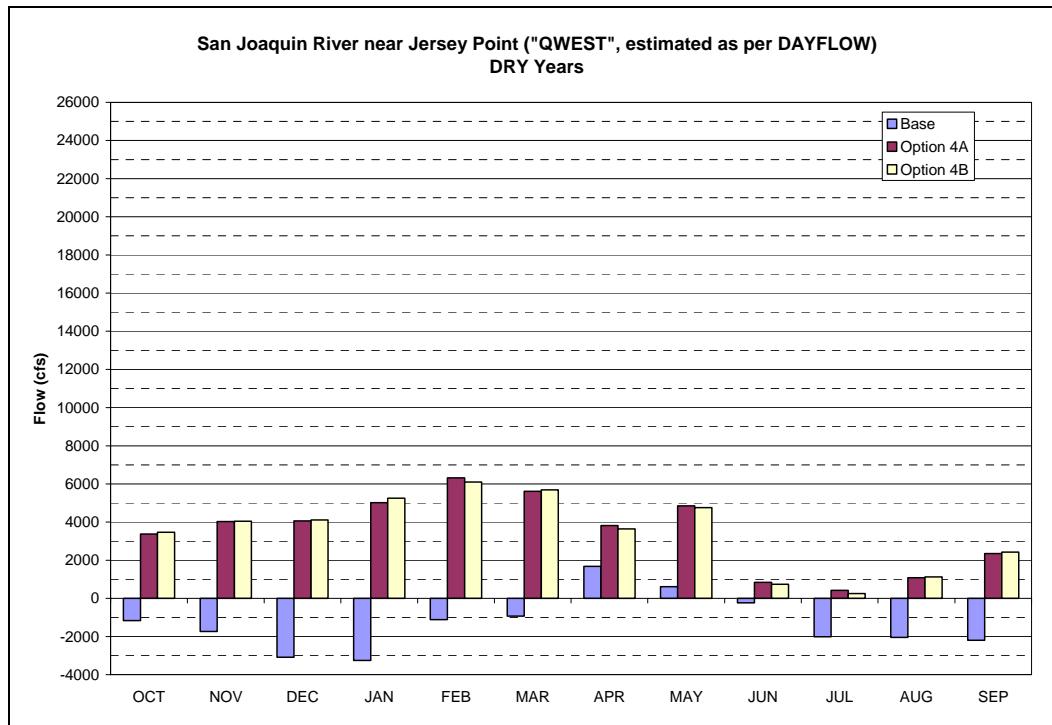
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5 **Figure G-5b. QWEST Above Normal Year Average Flows**  
6



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2 **Figure G-5c. QWEST Below Normal Year Average Flows**

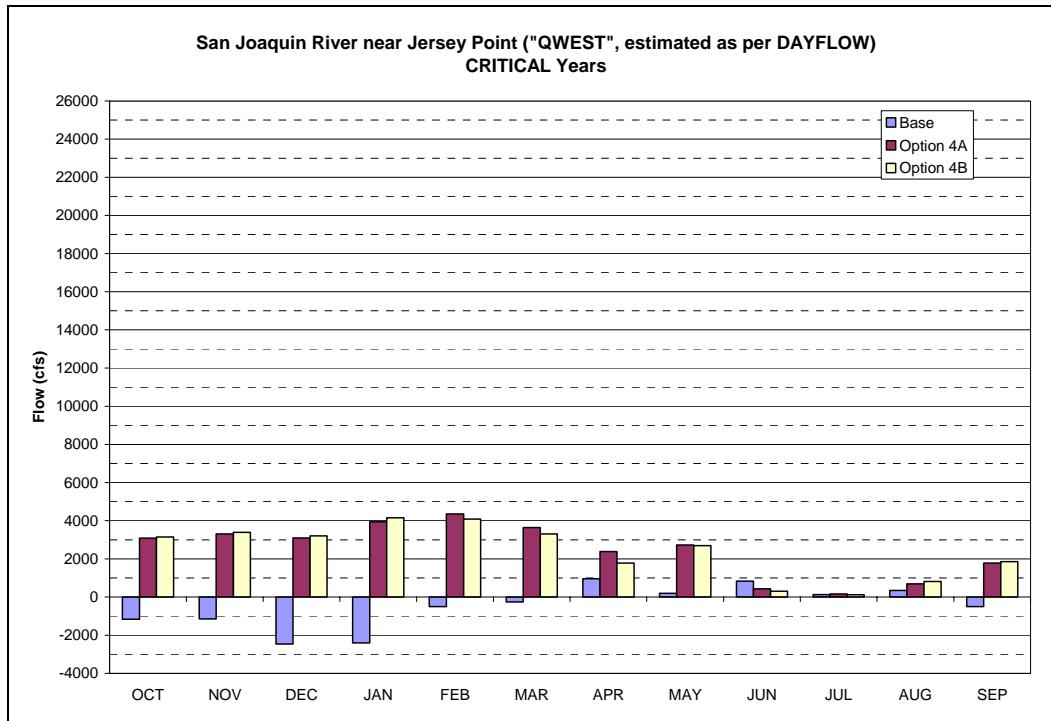
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5 **Figure G-5d. QWEST Dry Year Average Flows**

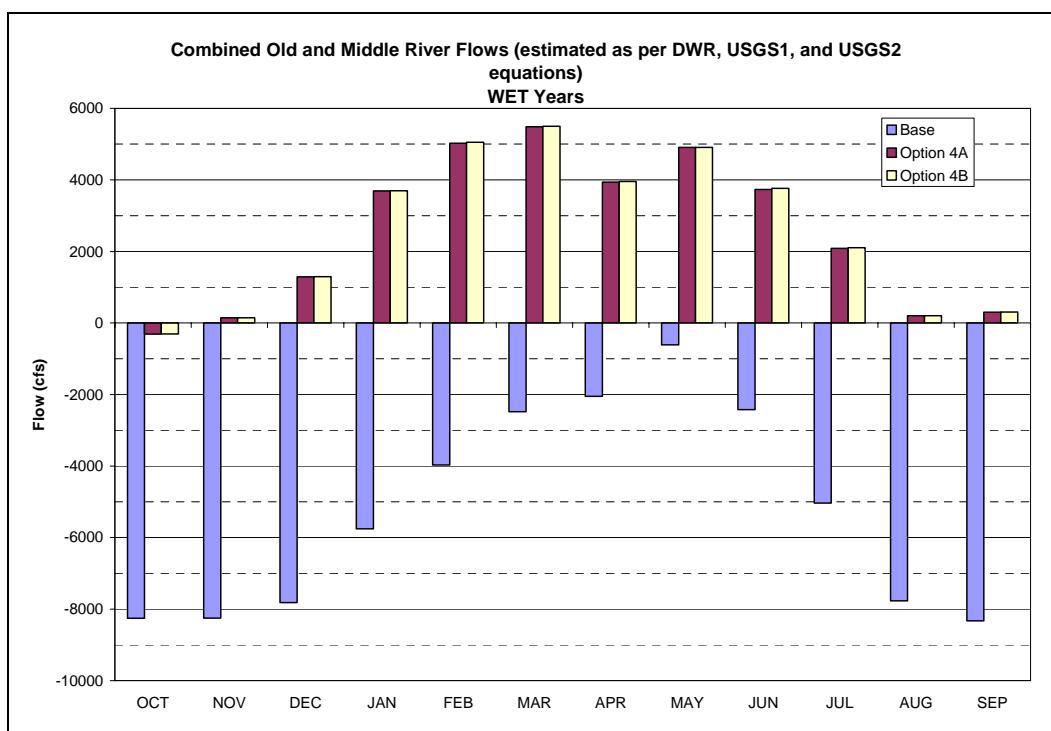
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2 **Figure G-5e. QWEST Critical Year Average Flows**

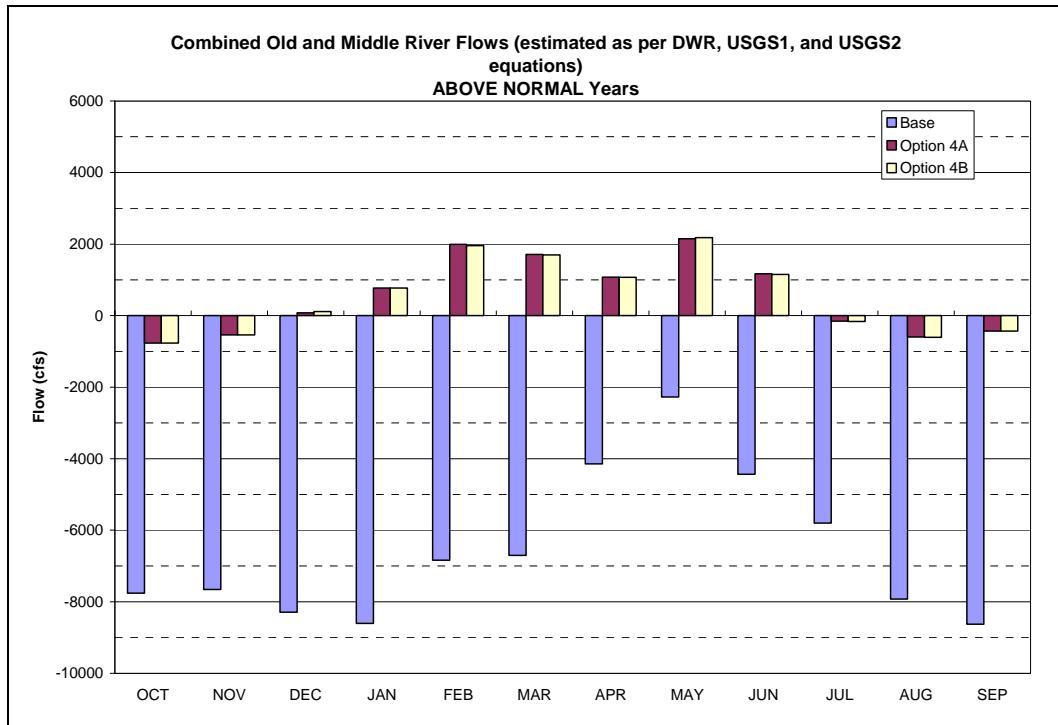
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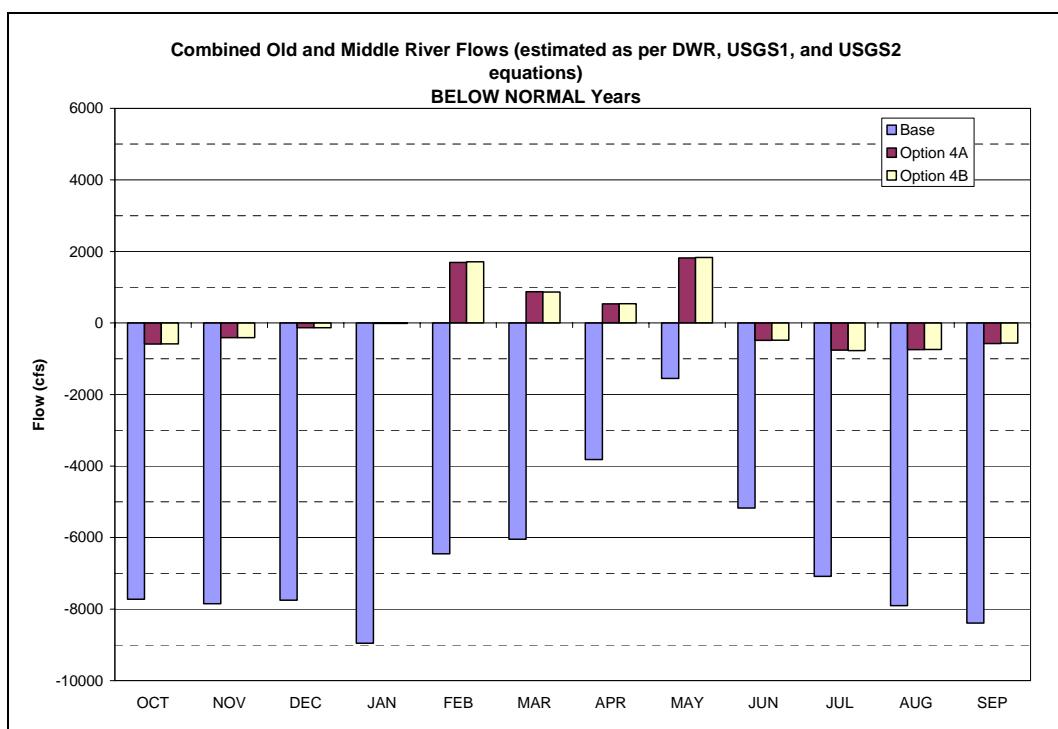
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5 **Figure G-6a. Combined Old and Middle River Wet Year Average Flows**

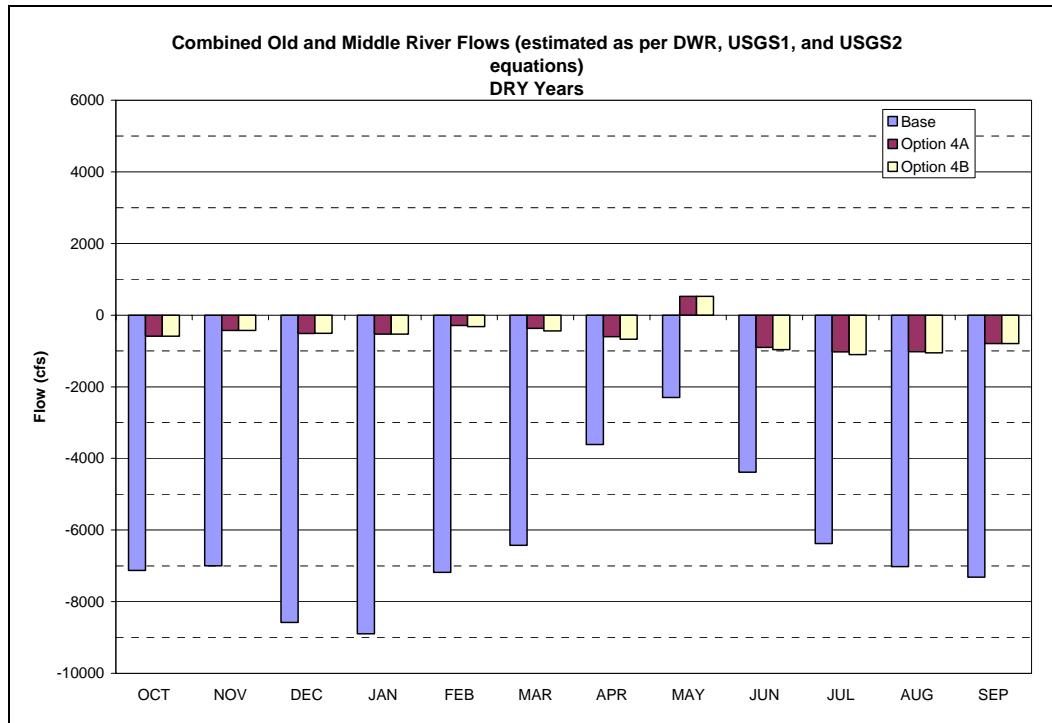
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2 **Figure G-6b. Combined Old and Middle River Above Normal Year Average Flows**  
3



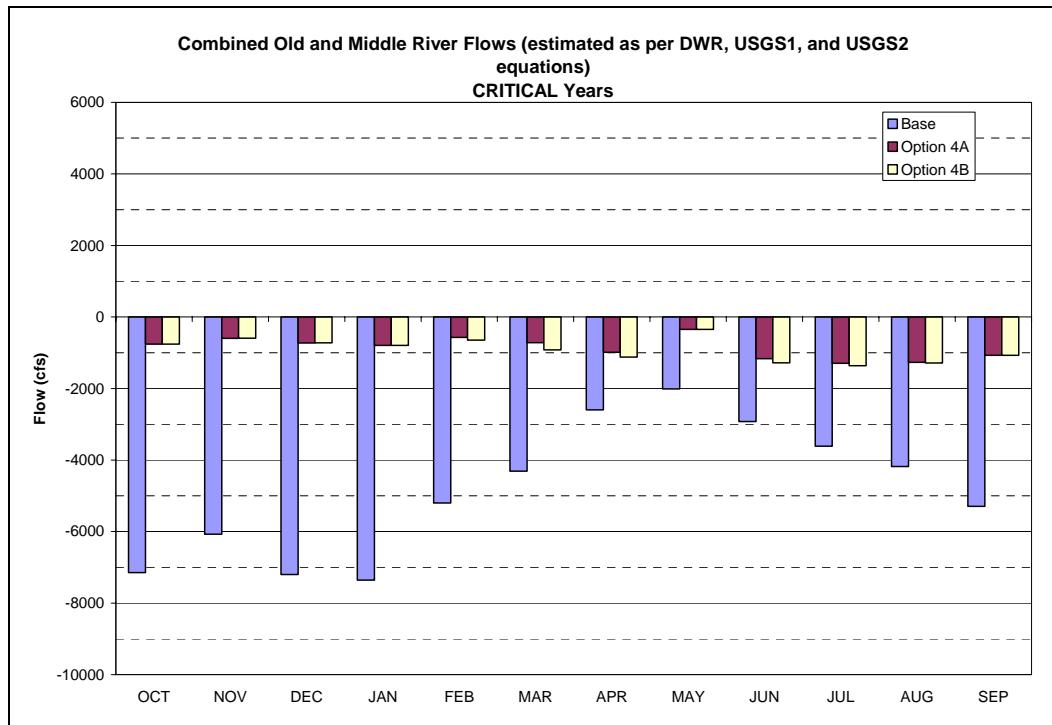
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5 **Figure G-6c. Combined Old and Middle River Below Normal Year Average Flows**  
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2 **Figure G-6d. Combined Old and Middle River Dry Year Average Flows**

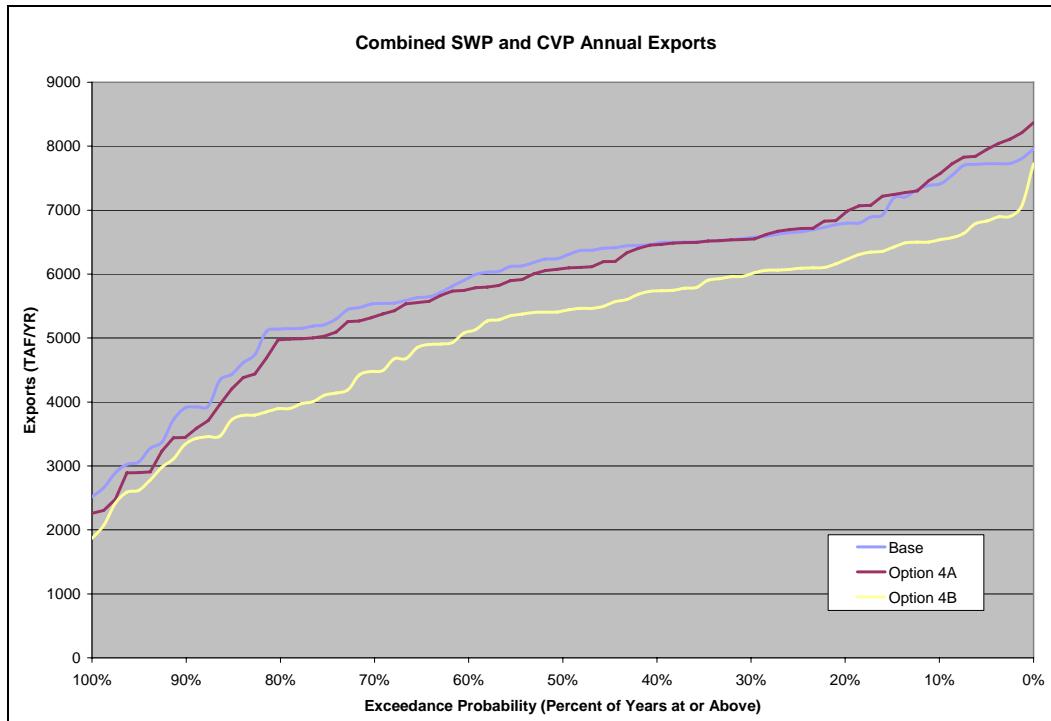
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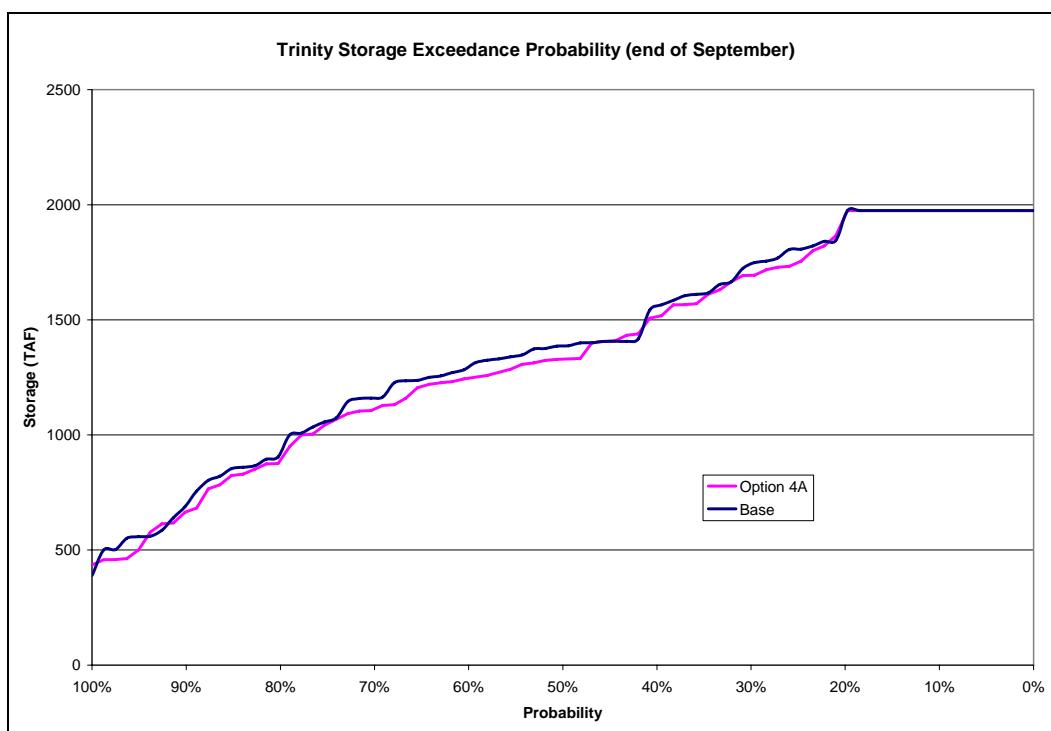
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5 **Figure G-6e. Combined Old and Middle River Critical Year Average Flows**

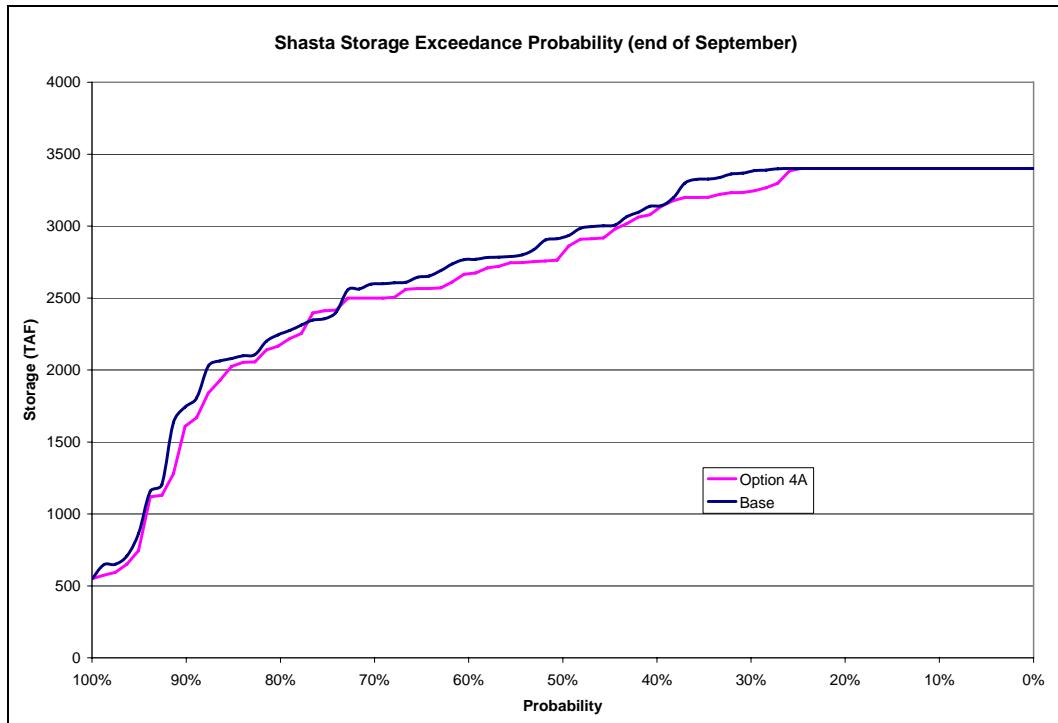
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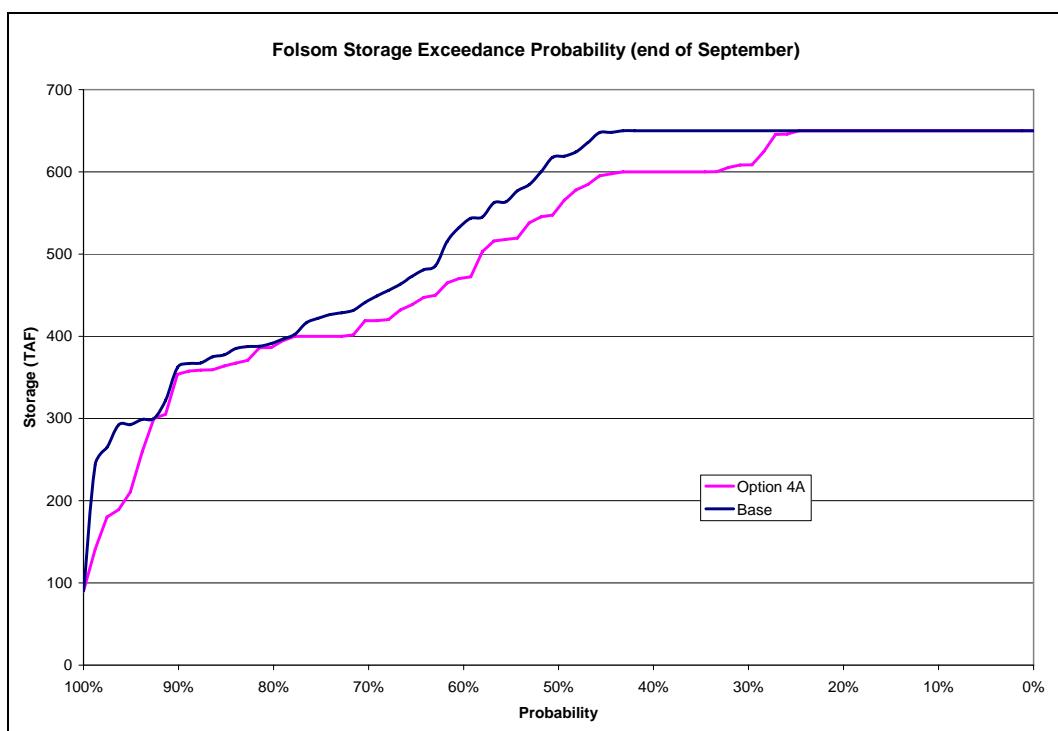
**Figure G-7. Water Supply Frequency: Combined SWP and CVP Annual Delta Exports**



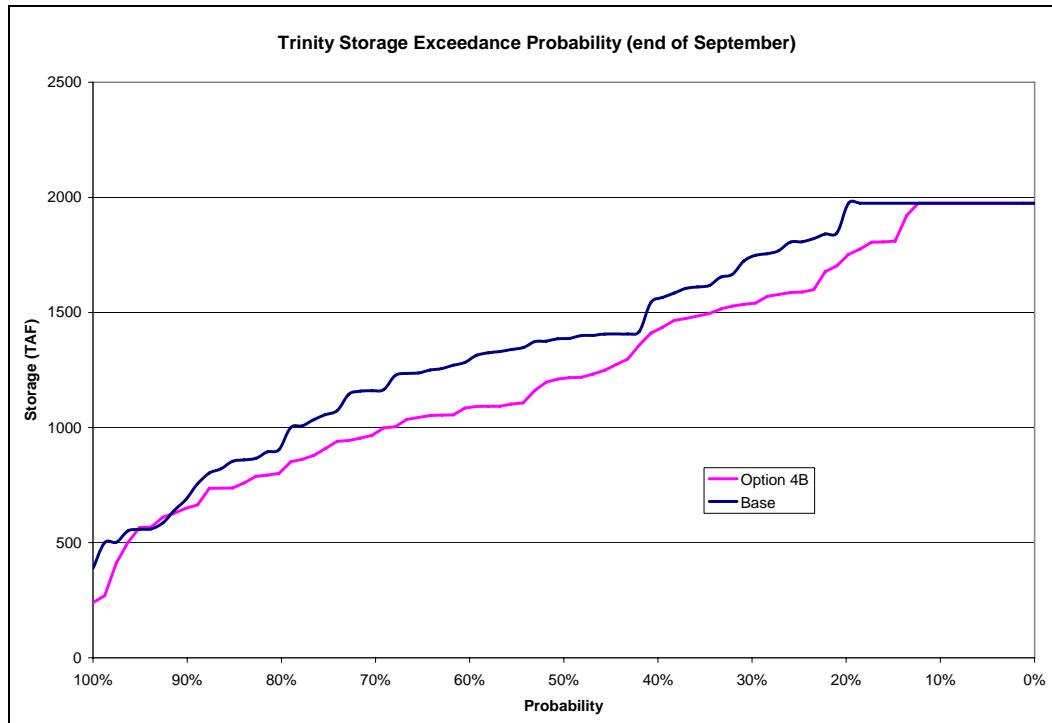
**Figure G-8a. Option 4A CVP Northern Delta Storage Frequency: Trinity**



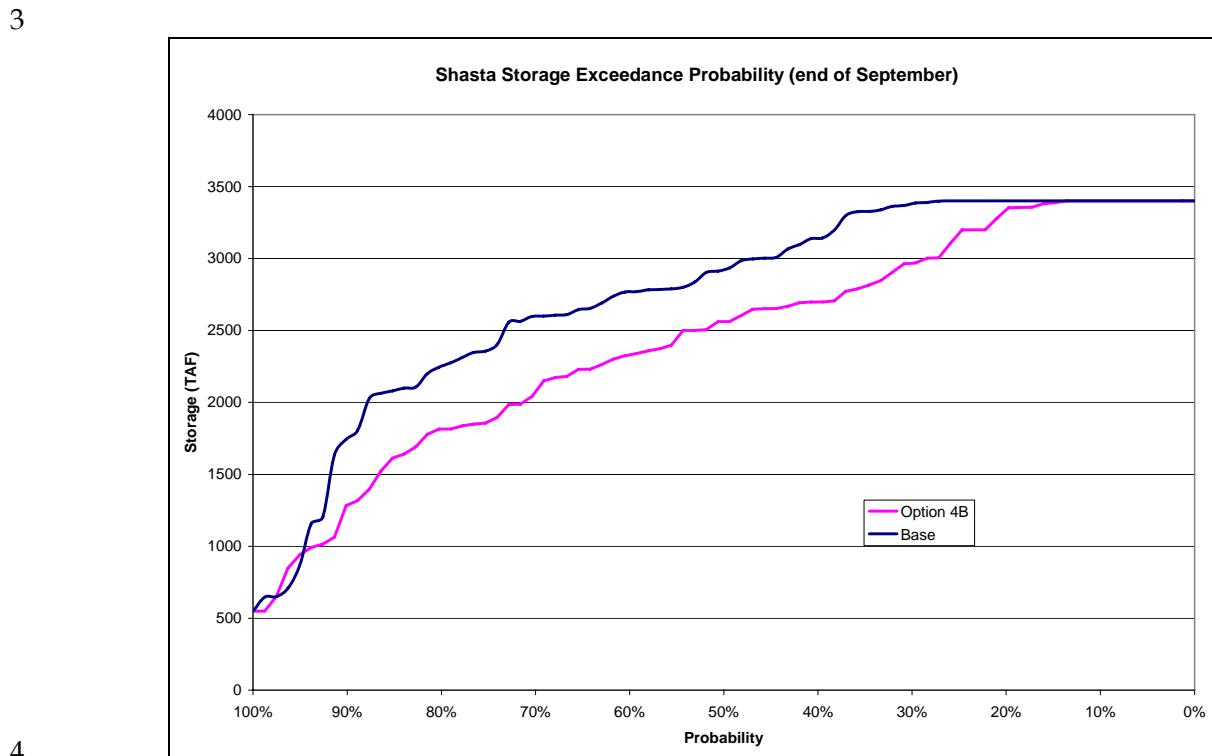
**Figure G-8b. Option 4A CVP Northern Delta Storage Frequency: Shasta**



**Figure G-8c. Option 4A CVP Northern Delta Storage Frequency: Folsom**



1  
2 **Figure G-9a. Option 4B CVP Northern Delta Storage Frequency: Trinity**



4  
5 **Figure G-9b. Option 4B CVP Northern Delta Storage Frequency: Shasta**

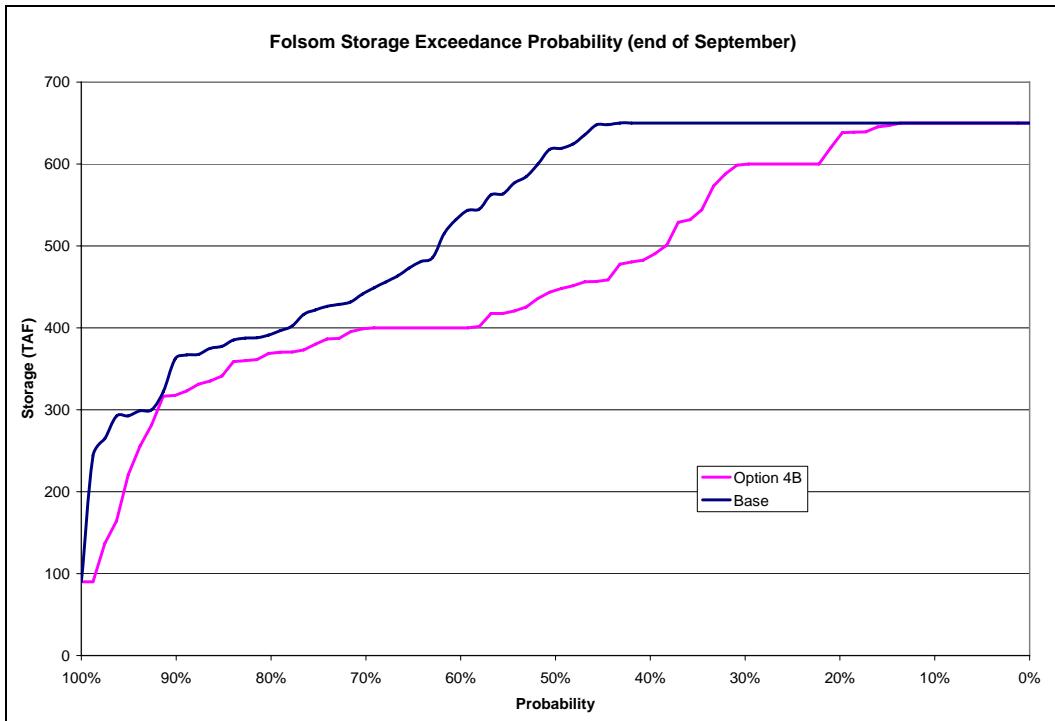


Figure G-9c. Option 4B CVP Northern Delta Storage Frequency: Folsom

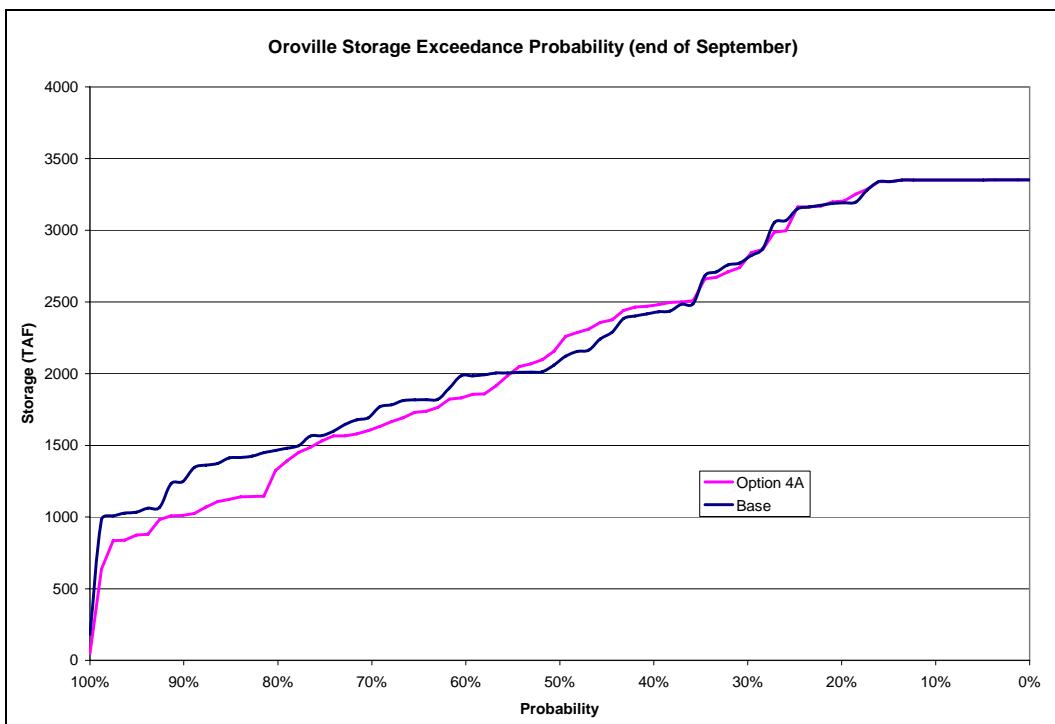
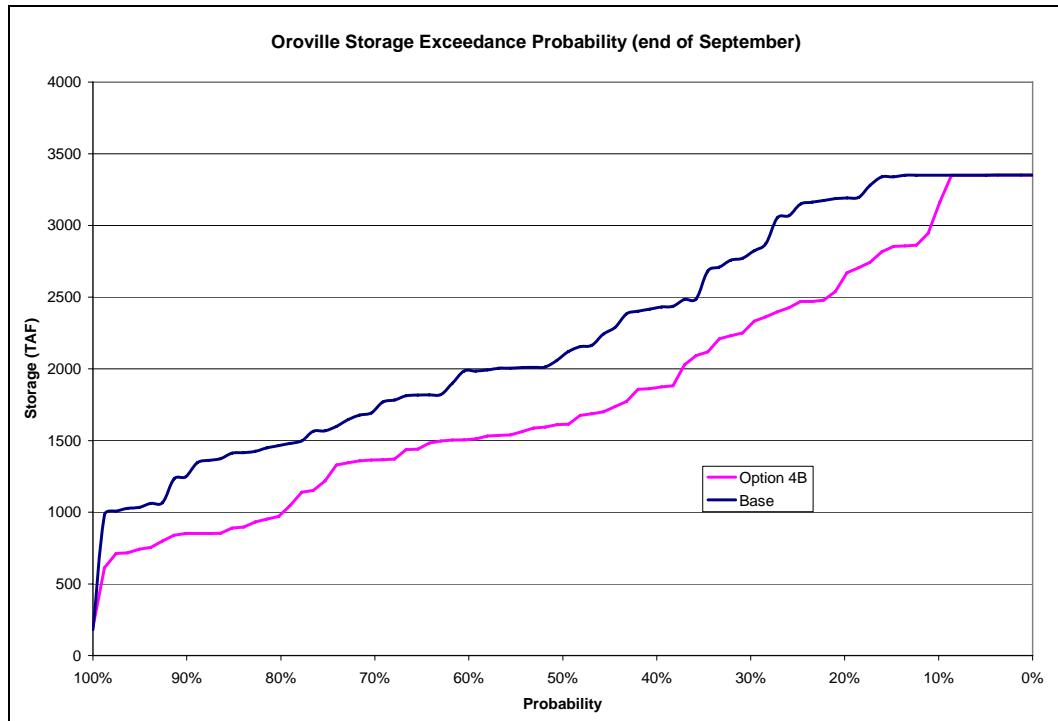
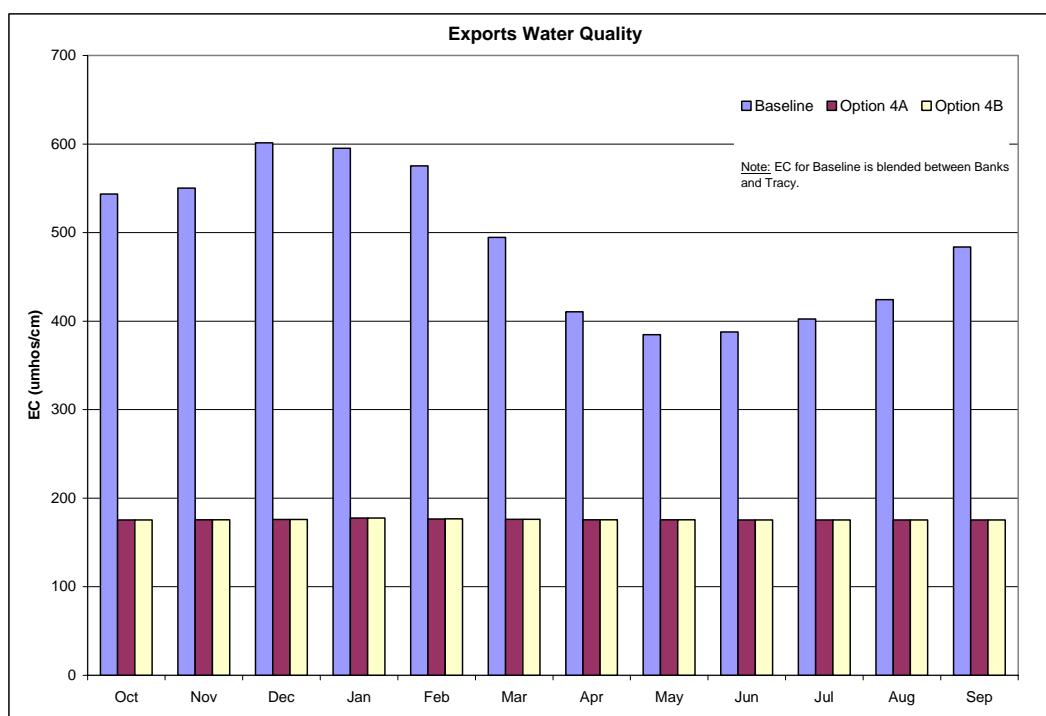


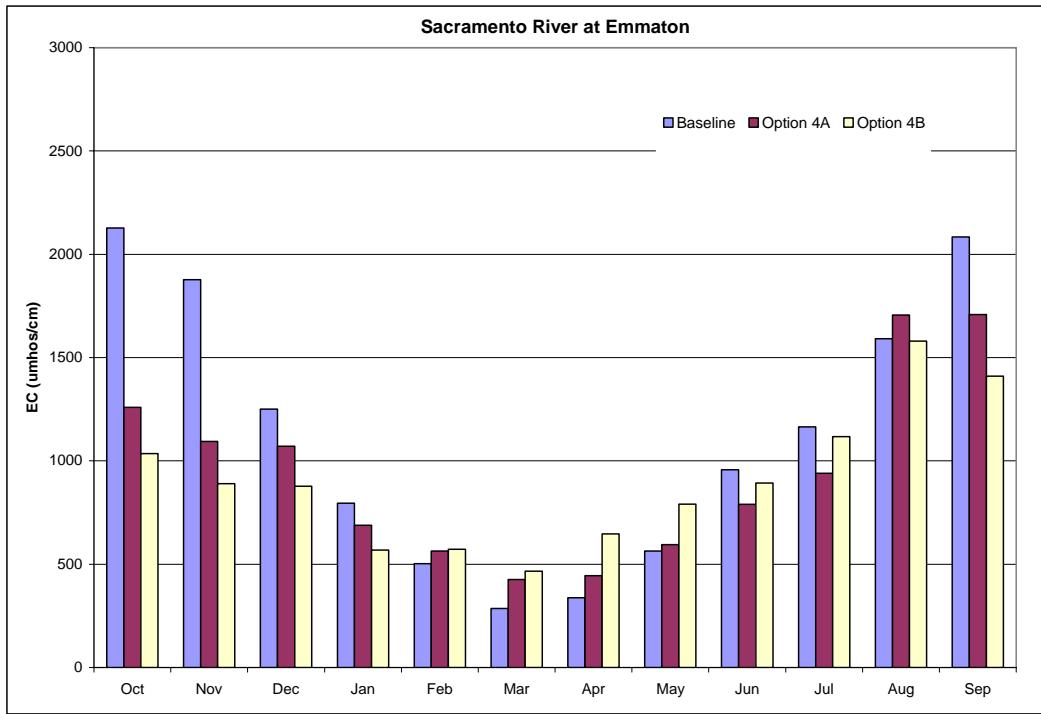
Figure G-10. Option 4A SWP Northern Delta Storage Frequency: Oroville



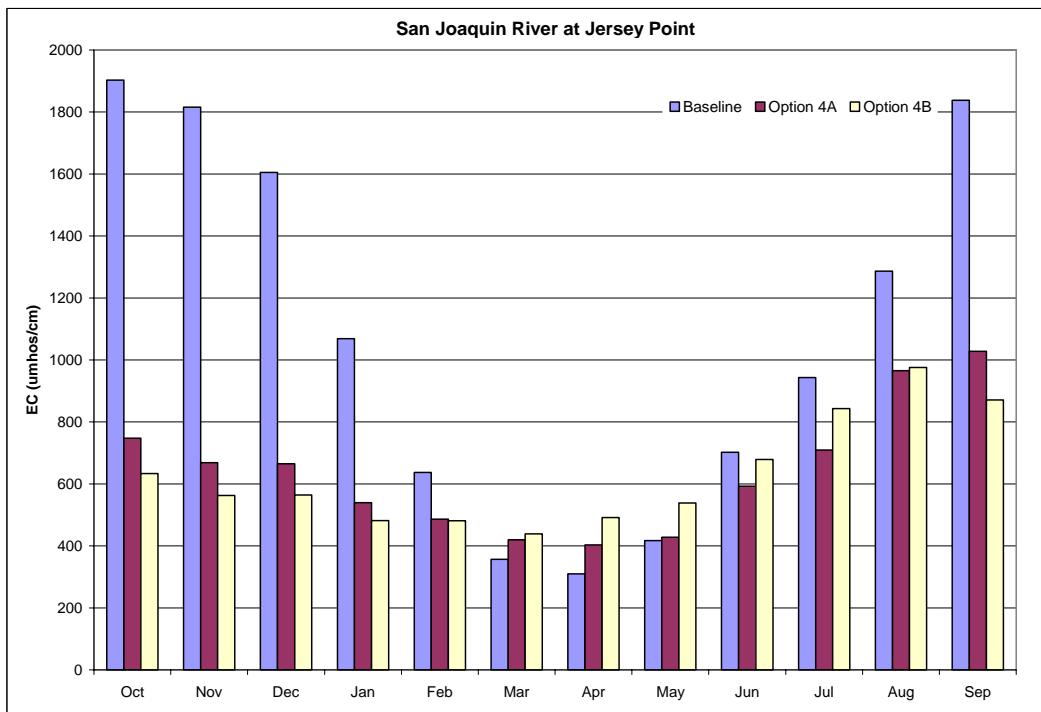
**Figure G-11. Option 4B SWP Northern Delta Storage Frequency: Oroville**



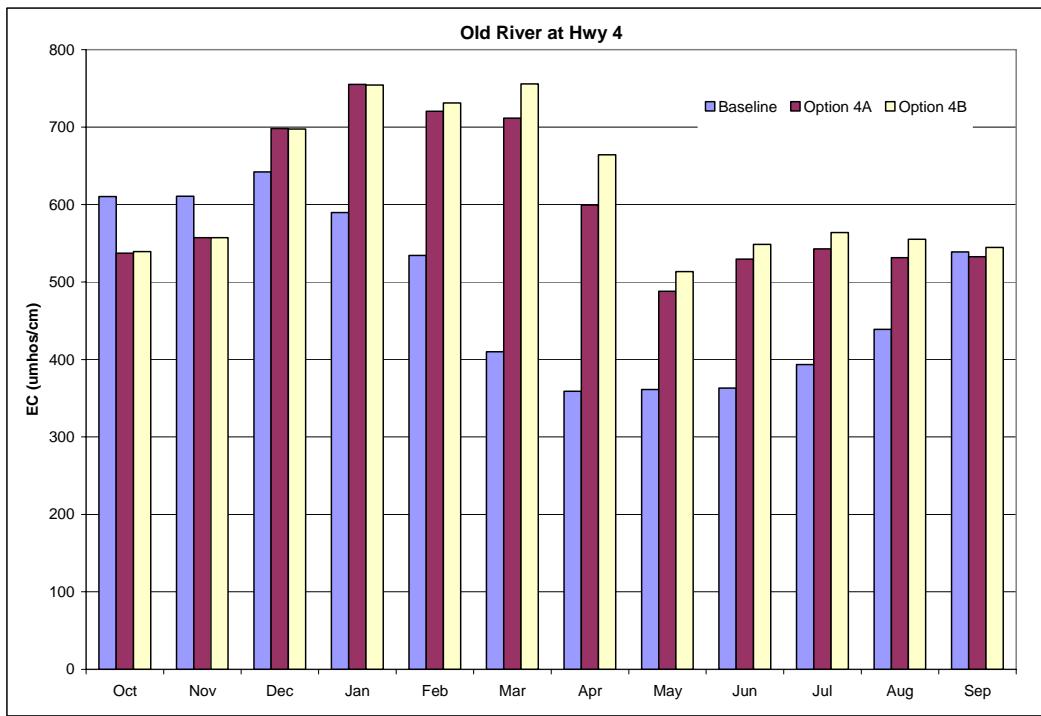
**Figure G-12. Export Water Quality Annual Average, 1975-1991**



**Figure G-13. In Delta Water Quality Annual Average, 1975-1991: Sacramento River at Emmaton**



**Figure G-14. In Delta Water Quality Annual Average, 1975-1991: San Joaquin River at Jersey Point**



1

2 **Figure G-15. In Delta Water Quality Annual Average, 1975-1991: Old River at Hwy 4**

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1 Table G-2. Option 4A Cumulative Particle Fate - September 1977

		Old River Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		1.7	0.7	4.0	1.0	5.0	1.4	5.6	2.1	6.7	2.9
PAST_CHIPPS		0.0	0.1	0.0	0.4	0.1	5.0	0.3	5.8	1.7	19.9
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3
EXPORTS*		53.1	0.0	67.5	0.0	75.3	0.0	79.9	0.0	84.3	0.0
CENTRAL		45.2	99.2	28.5	98.6	19.6	93.5	14.2	92.1	7.3	76.9

		Middle River Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.4	0.4	1.2	0.4	1.7	0.7	2.8	1.0	3.4	2.5
PAST_CHIPPS		0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	2.9
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXPORTS*		32.3	0.0	63.5	0.0	80.8	0.0	88.5	0.0	93.3	0.0
CENTRAL		67.3	99.6	35.3	99.6	17.5	99.1	8.7	98.7	3.3	94.6

		San Joaquin River d/s of Dutch Slough Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.7	0.4
PAST_CHIPPS		17.0	26.8	17.9	26.7	37.4	51.9	34.8	49.4	48.9	69.2
TO_SUISUN		0.1	0.6	0.0	0.0	0.3	0.2	0.0	0.2	0.2	0.2
EXPORTS*		0.0	0.0	0.5	0.0	2.1	0.0	4.5	0.0	11.0	0.0
CENTRAL		82.9	72.5	81.5	73.2	60.1	47.8	60.4	50.1	39.2	30.2

		Sacramento River Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.1	0.0	0.2	0.0	0.3	0.0	0.7	0.2	1.2	0.3
PAST_CHIPPS		0.3	0.3	1.1	2.1	9.0	12.3	10.0	16.7	20.6	37.5
TO_SUISUN		0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.3	0.1
EXPORTS*		0.0	0.0	0.9	0.0	4.6	0.0	9.6	0.0	20.2	0.0
CENTRAL		99.6	99.7	97.8	97.9	85.8	87.6	79.7	83.1	57.7	62.1

		San Joaquin River u/s of HOR Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		7.1	7.1	7.9	10.4	9.8	15.2	11.2	18.6	13.6	23.1
PAST_CHIPPS		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXPORTS*		30.3	0.0	32.4	0.0	33.5	0.0	46.5	0.0	67.1	0.0
CENTRAL		62.6	92.9	59.7	89.6	56.7	84.8	42.3	81.4	19.3	76.9

\* In Baseline Exports is the sum of particles entering SWP and CVP. In the Option 4 it is the particles leaving through IF diversion

1 Table G-3. Option 4A Cumulative Particle Fate - January 1981

		Old River Jan 1981 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0
PAST_CHIPPS		0.2	1.7	0.2	22.8	0.2	36.8	0.3	58.1	0.3	69.4
TO_SUISUN		0.0	0.5	0.0	2.2	0.0	4.7	0.0	6.8	0.0	8.6
EXPORTS*		90.4	0.0	95.1	0.0	97.6	0.0	98.0	0.0	98.7	0.0
CENTRAL		9.4	97.8	4.7	75.0	2.2	58.5	1.5	35.1	0.8	22.0

		Middle River Jan 1981 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAST_CHIPPS		0.0	0.1	0.0	2.3	0.0	6.9	0.0	22.6	0.0	35.6
TO_SUISUN		0.0	0.0	0.0	0.4	0.0	0.9	0.0	1.9	0.0	5.1
EXPORTS*		82.2	0.0	97.2	0.0	99.7	0.0	99.8	0.0	99.9	0.0
CENTRAL		17.8	99.9	2.8	97.3	0.3	92.2	0.2	75.5	0.1	59.3

		San Joaquin River d/s of Dutch Slough Jan 1981 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAST_CHIPPS		35.1	63.6	51.5	85.4	54.9	87.6	57.4	88.3	58.4	88.8
TO_SUISUN		4.6	6.8	6.6	9.5	7.1	10.2	7.3	10.6	7.6	10.7
EXPORTS*		1.7	0.0	8.5	0.0	16.7	0.0	23.2	0.0	28.8	0.0
CENTRAL		58.6	29.6	33.4	5.1	21.3	2.2	12.1	1.1	5.2	0.5

		Sacramento River Jan 1981 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAST_CHIPPS		46.1	46.5	57.4	78.7	60.4	82.7	62.4	86.5	62.6	87.7
TO_SUISUN		4.8	4.5	6.3	8.8	6.6	10.5	6.9	11.0	6.9	11.2
EXPORTS*		2.4	0.0	10.2	0.0	16.9	0.0	22.2	0.0	27.0	0.0
CENTRAL		46.7	49.0	26.1	12.5	16.1	6.8	8.5	2.5	3.5	1.1

		San Joaquin River u/s of HOR Jan 1981 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5
PAST_CHIPPS		0.0	0.0	0.0	0.1	0.0	0.7	0.0	5.9	0.0	20.9
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	2.3
EXPORTS*		65.1	0.0	70.4	0.0	86.3	0.0	93.5	0.0	96.1	0.0
CENTRAL		34.9	100.0	29.6	99.9	13.7	99.2	6.5	93.5	3.9	76.3

\* In Baseline Exports is the sum of particles entering SWP and CVP. In the Option 4 it is the particles leaving through IF diversion

1    Table G-4. Option 4A Cumulative Particle Fate - March 1990

		Old River Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.4	0.1	0.6	0.4	1.8	0.4	2.2	0.4	3.3	1.2
PAST_CHIPPS		0.0	0.6	0.1	2.2	0.9	13.1	0.8	13.5	1.6	28.8
TO_SUISUN		0.0	0.0	0.0	0.6	0.2	2.8	0.5	5.5	0.8	8.9
EXPORTS*		52.9	0.0	71.9	0.0	79.9	0.0	84.0	0.0	85.3	0.0
CENTRAL		46.7	99.3	27.4	96.8	17.2	83.7	12.5	80.6	9.0	61.1

		Middle River Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.2	0.0	0.6	0.2	1.2	0.3	2.0	0.5	2.6	2.3
PAST_CHIPPS		0.0	0.1	0.0	0.4	0.0	1.6	0.0	1.9	0.1	6.2
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.0	1.3
EXPORTS*		24.6	0.0	61.0	0.0	77.6	0.0	85.0	0.0	87.4	0.0
CENTRAL		75.2	99.9	38.4	99.4	21.2	97.8	13.0	96.9	9.9	90.2

		San Joaquin River d/s of Dutch Slough Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.0
PAST_CHIPPS		31.6	37.3	35.3	37.9	51.8	56.3	47.2	51.9	56.5	64.5
TO_SUISUN		6.3	9.4	9.8	14.7	12.2	18.3	13.7	21.2	15.8	24.0
EXPORTS*		0.0	0.0	0.4	0.0	1.1	0.0	2.6	0.0	3.7	0.0
CENTRAL		62.1	53.3	54.5	47.4	34.9	25.4	36.3	26.9	23.5	11.5

		Sacramento River Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		0.0	0.1	0.0	0.1	0.1	0.2	0.1	0.3	0.5	0.7
PAST_CHIPPS		20.6	4.4	26.0	10.2	39.3	29.9	36.7	28.6	47.7	47.6
TO_SUISUN		4.2	0.7	7.4	4.1	10.0	9.0	11.5	13.0	14.1	16.7
EXPORTS*		0.0	0.0	1.2	0.0	3.7	0.0	6.9	0.0	7.6	0.0
CENTRAL		75.2	94.8	65.4	85.6	46.9	60.9	44.8	58.1	30.1	35.0

		San Joaquin River u/s of HOR Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A	Base	Option 4A
DIVERSION_AG		14.3	13.4	19.4	20.1	20.1	23.4	20.1	26.0	22.1	33.7
PAST_CHIPPS		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
EXPORTS*		51.1	0.0	54.6	0.0	54.9	0.0	54.9	0.0	55.2	0.0
CENTRAL		34.6	86.6	26.0	79.9	25.0	76.6	25.0	74.0	22.7	65.9

\* In Baseline Exports is the sum of particles entering SWP and CVP. In the Option 4 it is the particles leaving through IF diversion

1 Table G-5. Option 4B Cumulative Particle Fate - September 1977

		Old River Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		1.7	1.2	4.0	1.9	5.0	2.6	5.6	3.3	6.7	4.3
PAST_CHIPPS		0.0	0.1	0.0	0.6	0.1	6.0	0.3	7.3	1.7	22.3
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXPORTS*		53.1	0.0	67.5	0.0	75.3	0.0	79.9	0.0	84.3	0.0
CENTRAL		45.2	98.7	28.5	97.5	19.6	91.4	14.2	89.4	7.3	73.4

		Middle River Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		0.4	0.0	1.2	0.0	1.7	0.3	2.8	0.8	3.4	2.2
PAST_CHIPPS		0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	2.5
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
EXPORTS*		32.3	0.0	63.5	0.0	80.8	0.0	88.5	0.0	93.3	0.0
CENTRAL		67.3	100.0	35.3	100.0	17.5	99.3	8.7	98.9	3.3	95.2

		San Joaquin River d/s of Dutch Slough Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		0.0	0.0	0.1	0.0	0.1	0.0	0.3	0.0	0.7	0.4
PAST_CHIPPS		17.0	26.2	17.9	27.4	37.4	53.8	34.8	54.4	48.9	74.0
TO_SUISUN		0.1	0.6	0.0	0.3	0.3	0.4	0.0	0.2	0.2	0.2
EXPORTS*		0.0	0.0	0.5	0.0	2.1	0.0	4.5	0.0	11.0	0.0
CENTRAL		82.9	73.2	81.5	72.3	60.1	45.8	60.4	45.4	39.2	25.4

		Sacramento River Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4A	Base	Option 4B	Base	Option 4A	Base	Option 4B
DIVERSION_AG		0.1	0.1	0.2	0.2	0.3	0.2	0.7	0.2	1.2	0.5
PAST_CHIPPS		0.3	0.5	1.1	3.0	9.0	18.2	10.0	21.0	20.6	45.9
TO_SUISUN		0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.3	0.1
EXPORTS*		0.0	0.0	0.9	0.0	4.6	0.0	9.6	0.0	20.2	0.0
CENTRAL		99.6	99.4	97.8	96.8	85.8	81.4	79.7	78.8	57.7	53.5

		San Joaquin River u/s of HOR Sep 1977 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		7.1	6.5	7.9	9.5	9.8	15.9	11.2	20.4	13.6	23.2
PAST_CHIPPS		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXPORTS*		30.3	0.0	32.4	0.0	33.5	0.0	46.5	0.0	67.1	0.0
CENTRAL		62.6	93.5	59.7	90.5	56.7	84.1	42.3	79.6	19.3	76.8

\* In Baseline Exports is the sum of particles entering SWP and CVP. In the Option 4 it is the particles leaving through IF diversion

1 Table G-6. Option 4B Cumulative Particle Fate - January 1981

	Old River Jan 1981 Release - Cumulative particles (%)									
	7 Days		14 Days		21 Days		28 Days		40 Days	
	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0
PAST_CHIPPS	0.2	1.4	0.2	18.2	0.2	28.5	0.3	53.6	0.3	65.0
TO_SUISUN	0.0	0.5	0.0	1.8	0.0	3.9	0.0	6.5	0.0	9.7
EXPORTS*	90.4	0.0	95.1	0.0	97.6	0.0	98.0	0.0	98.7	0.0
CENTRAL	9.4	98.1	4.7	80.0	2.2	67.6	1.5	39.9	0.8	25.3

	Middle River Jan 1981 Release - Cumulative particles (%)									
	7 Days		14 Days		21 Days		28 Days		40 Days	
	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAST_CHIPPS	0.0	0.0	0.0	1.5	0.0	5.1	0.0	18.3	0.0	33.1
TO_SUISUN	0.0	0.0	0.0	0.2	0.0	1.1	0.0	2.7	0.0	5.1
EXPORTS*	82.2	0.0	97.2	0.0	99.7	0.0	99.8	0.0	99.9	0.0
CENTRAL	17.8	100.0	2.8	98.3	0.3	93.8	0.2	79.0	0.1	61.8

	San Joaquin River d/s of Dutch Slough Jan 1981 Release - Cumulative particles (%)									
	7 Days		14 Days		21 Days		28 Days		40 Days	
	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAST_CHIPPS	35.1	47.6	51.5	77.3	54.9	79.1	57.4	84.6	58.4	85.5
TO_SUISUN	4.6	7.2	6.6	11.7	7.1	12.7	7.3	13.5	7.6	13.6
EXPORTS*	1.7	0.0	8.5	0.0	16.7	0.0	23.2	0.0	28.8	0.0
CENTRAL	58.6	45.2	33.4	11.0	21.3	8.2	12.1	1.9	5.2	0.9

	Sacramento River Jan 1981 Release - Cumulative particles (%)									
	7 Days		14 Days		21 Days		28 Days		40 Days	
	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PAST_CHIPPS	46.1	19.5	57.4	62.9	60.4	69.3	62.4	80.0	62.6	82.1
TO_SUISUN	4.8	5.1	6.3	9.8	6.6	12.8	6.9	13.6	6.9	14.9
EXPORTS*	2.4	0.0	10.2	0.0	16.9	0.0	22.2	0.0	27.0	0.0
CENTRAL	46.7	75.4	26.1	27.3	16.1	17.9	8.5	6.4	3.5	3.0

	San Joaquin River u/s of HOR Jan 1981 Release - Cumulative particles (%)									
	7 Days		14 Days		21 Days		28 Days		40 Days	
	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3
PAST_CHIPPS	0.0	0.0	0.0	0.0	0.0	0.4	0.0	5.2	0.0	18.8
TO_SUISUN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	2.0
EXPORTS*	65.1	0.0	70.4	0.0	86.3	0.0	93.5	0.0	96.1	0.0
CENTRAL	34.9	100.0	29.6	100.0	13.7	99.6	6.5	94.4	3.9	78.9

\* In Baseline Exports is the sum of particles entering SWP and CVP. In the Option 4 it is the particles leaving through IF diversion

1 Table G-7. Option 4B Cumulative Particle Fate – March 1990

		Old River Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		0.4	0.2	0.6	0.3	1.8	0.4	2.2	0.5	3.3	1.9
PAST_CHIPPS		0.0	0.9	0.1	2.0	0.9	7.6	0.8	7.9	1.6	14.3
TO_SUISUN		0.0	0.1	0.0	0.9	0.2	2.4	0.5	3.9	0.8	7.3
EXPORTS*		52.9	0.0	71.9	0.0	79.9	0.0	84.0	0.0	85.3	0.0
CENTRAL		46.7	98.8	27.4	96.8	17.2	89.6	12.5	87.7	9.0	76.5

		Middle River Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		0.2	0.1	0.6	0.3	1.2	0.7	2.0	1.2	2.6	3.3
PAST_CHIPPS		0.0	0.0	0.0	0.1	0.0	0.7	0.0	1.1	0.1	2.4
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.0	1.1
EXPORTS*		24.6	0.0	61.0	0.0	77.6	0.0	85.0	0.0	87.4	0.0
CENTRAL		75.2	99.9	38.4	99.6	21.2	98.3	13.0	97.0	9.9	93.2

		San Joaquin River d/s of Dutch Slough Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.0
PAST_CHIPPS		31.6	37.2	35.3	37.2	51.8	53.5	47.2	47.2	56.5	53.0
TO_SUISUN		6.3	8.0	9.8	13.2	12.2	17.1	13.7	20.2	15.8	23.6
EXPORTS*		0.0	0.0	0.4	0.0	1.1	0.0	2.6	0.0	3.7	0.0
CENTRAL		62.1	54.8	54.5	49.6	34.9	29.4	36.3	32.6	23.5	23.4

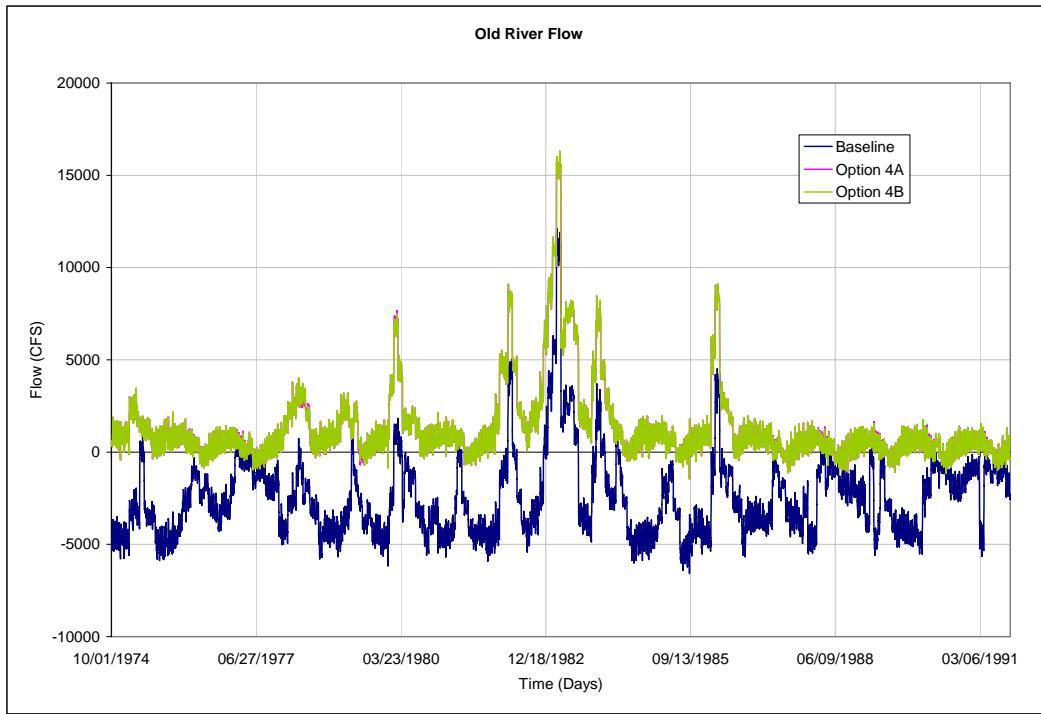
  

		Sacramento River Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		0.0	0.1	0.0	0.2	0.1	0.2	0.1	0.3	0.5	0.3
PAST_CHIPPS		20.6	3.2	26.0	7.3	39.3	26.4	36.7	23.6	47.7	33.3
TO_SUISUN		4.2	1.0	7.4	3.6	10.0	7.6	11.5	10.9	14.1	15.3
EXPORTS*		0.0	0.0	1.2	0.0	3.7	0.0	6.9	0.0	7.6	0.0
CENTRAL		75.2	95.7	65.4	88.9	46.9	65.8	44.8	65.2	30.1	51.1

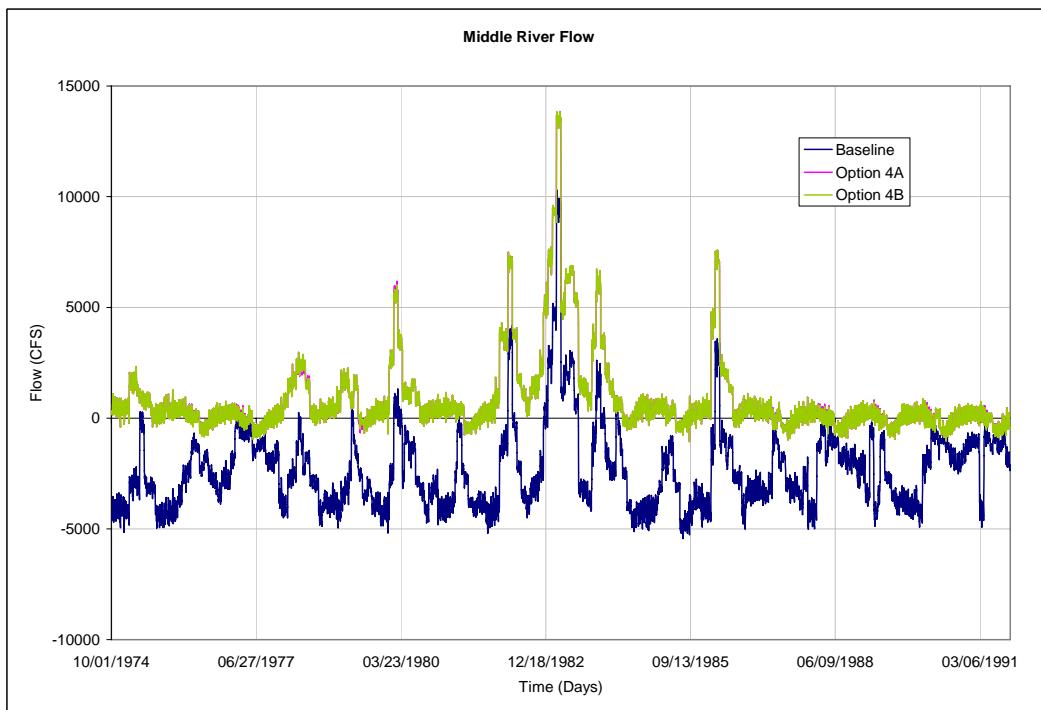
  

		San Joaquin River u/s of HOR Mar 1990 Release - Cumulative particles (%)									
		7 Days		14 Days		21 Days		28 Days		40 Days	
		Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B	Base	Option 4B
DIVERSION_AG		14.3	18.4	19.4	30.3	20.1	33.8	20.1	36.0	22.1	44.9
PAST_CHIPPS		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TO_SUISUN		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EXPORTS*		51.1	0.0	54.6	0.0	54.9	0.0	54.9	0.0	55.2	0.0
CENTRAL		34.6	81.6	26.0	69.7	25.0	66.2	25.0	64.0	22.7	55.1

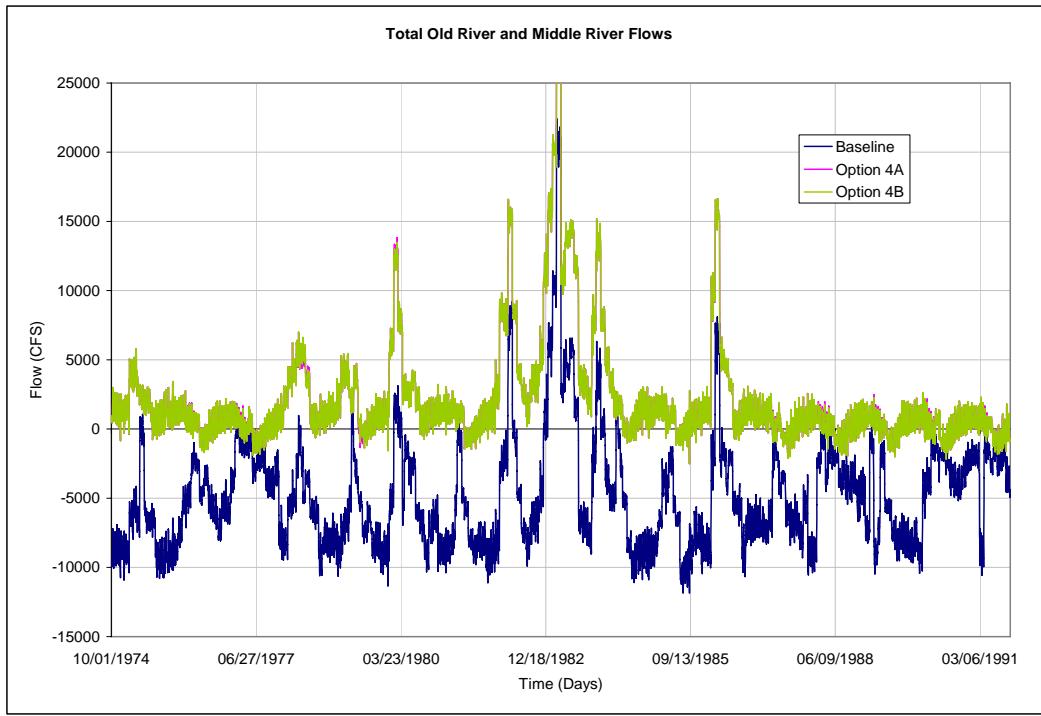
\* In Baseline Exports is the sum of particles entering SWP and CVP. In the Option 4 it is the particles leaving through IF diversion



**Figure G-16. DSM2 Simulated Daily Averaged Old River Flows**



**Figure G-17. DSM2 Simulated Daily Averaged Middle River Flows**



1  
2 **Figure G-18. DSM2 Simulated Daily Averaged Combined Old and Middle River Flows**  
3